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ABSTRACT

This report of Environmental Education Centers (EECs) presents recommendations development of long range plans for the development and program coordination of EECs in Minnesota. The plan focuses on identifying programming needs, geographic areas to locate facilities, and capital costs for development and creation of a phased-in implementation plan. The report is divided into three parts that give detailed information about the process and recommendations from the project committee. Part 1 "Committee Discussion of Facility Type, Recommendations & Rationale" provides an interpretation of EEC types, six recommendations and rationale for legislative support for these facilities. The recommendations include: (1) state support for the development of an adequate number of EECs to serve all Minnesota citizens; (2) access to EECs as part of formal education for all students; (3) allocation of formal education program funding; (4) state funding for capital development and improvement of EEC facilities; (5) a grant program for EECs; and (6) a state maintained directory of EECs. Part 2 presents a summary of part 3 "Supporting Information." Part 3 provides a discussion of the data gathering process, analysis of environmental education surveys in Minnesota, facility focus group results, EEC inventory data, and private foundation funding. Appendixes to the various sections include: survey instruments, lists of focus group participants, census form of EECs in Minnesota, lists of EEC survey respondents, and EEC technical advisory committee and state agency participants. (MCO)

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E.E.C. 2000:
A Study of Environmental Education Centers

As required by 1990 Laws of Minnesota; Chapter 610, Section 20, Article 1, Subdivision 7: "The commissioner in cooperation with other affected agencies and residential and nonresidential learning center directors shall develop a long-range plan for the development and program coordination of environmental learning centers statewide. The plan must focus on identifying programming needs, geographic areas to locate facilities, capital cost estimates for development and creation of a phased-in implementation strategy. The plan must be completed for presentation to the Legislature by January 1, 1992."

Part I
Parts II & III

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee

January 1992

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A Study of Environmental Education Centers

Part I

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee

January 1992

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ENVIRONMENTAL EDUCATION CENTER STUDY

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee
January 1992

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[1]***Note: Parts II & III of the study are contained in a separate bound volume.***

A Note to the Reader:

For the purposes of this study, all facilities which offer environmental education services are called 'environmental education centers'. This study does not use the term 'environmental learning center' generically. Since some residential facilities are called 'environmental learning centers' the use of that term may confuse the reader when the discussion, for example, actually refers to a day-use center or other non-residential educational facility.

The committee responsible for this study's recommendations defines an Environmental Education Center as:

> *Any facility, other than public or private schools, that offers professional field-based environmental instruction, either full or part-time, including both residential and day-use facilities. The instruction offered is designed to increase understanding of ecological systems and of the complex interrelationships between people and nature. Environmental education centers provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.*

Residential learning centers, nature centers, parks, zoos, camps, museums, and other specialty environmental educational facilities are included within the definition above.

Environmental Education Center Study Committee Members' Ratification of Study Recommendations

We the undersigned members of the Environmental Education Center Study Committee, do hereby ratify the foregoing report and recommendations as representing our best effort to address the mandates as expressed by the Minnesota Legislature in M.S. 1990 Chapter 610, Section 20, Article 1, Subdivision 7:

Mary E. Corcoran
Science Museum of Minnesota

Pat Hamilton
Science Museum of Minnesota

Steve Hage
Minnesota Zoo

Jack Pichotta
Wolf Ridge ELC

Eileen Kilpatrick
Minneapolis Park Board

Al Singer
Minneapolis Park Board

Lee Ann Landstrom
Eastman Nature Center

Bob Schwaderer
Long Lake Conservation Center

Mike Link
Northwoods Audubon Center

Siah St. Clair
Springbrook Nature Center

Kurt Marple
Camp Courage ELC

Kathleen Wallace
Department of Natural Resources,
Division of Parks and Recreation

Greg Munson
Quarry Hill Nature Center

Environmental Education Center Study

Executive Summary

Part I. *Committee Discussion of Facility Type, Recommendations & Rationale*

This portion of the study provides the committee's interpretation of environmental education center types and recommendations for legislative support for these facilities which is needed to provide quality environmental education in Minnesota. For the purposes of the study and recommendations, committee members placed environmental education centers into three major categories: 1) Day Use Centers (Nature Centers & Parks); 2) Museums, Zoos, & Special Emphasis Facilities; and, 3) Residential Facilities (Environmental Learning Centers & Camps). The general missions of these facility types, as well as their major markets, are discussed in Part I as well.

Committee members developed and agreed on six recommendations for legislative consideration:

1) **The state should support the development of an adequate number of environmental education centers to serve all Minnesota citizens.**

2) **All students should have access to an environmental education center as a part of their formal education.**

3) **The state should allocate $12 per student per year for environmental education center experiences from the current state school aid formula to schools.**

4) **The state should provide funding for phased-in capital development and improvement of environmental education facilities. (Request totals 83.76 million dollars phased in over four biennia - see Part I, page 11).**

5) **The state should establish a biennial $4 million programming grant program for environmental education centers.**

6) **The Department of Education should compile and maintain a directory of environmental education centers and distribute it to schools and other interested parties across the state.**

Part I of the study provides details and the rationale for each of the six recommendations above.

Parts II & III. Supporting Information

Committee members used four primary sources of information in addition to their expertise for developing study recommendations. One information source consists of data on the opinions of residents of Minnesota over 18 years old, teachers, and educational administrators about environmental education in Minnesota. These data, obtained through three surveys conducted by the Minnesota Center for Survey Research, will be used for other portions of the state-wide environmental education planning effort.

The other three sources of information were developed by the Department of Natural Resources Office of Planning. The first source was focus groups conducted with environmental education center providers. Focus group participants provided information about the history of environmental education centers, their strengths, and challenges for the future. The second source consists of information from a survey conducted of environmental education centers. Survey questions were designed to learn more about environmental education centers' missions, student capacities, clientele, and staff. The third source used in this study consists of information from a review of private foundation funding sources. This review looks at the role foundations play in funding environmental education initiatives.

A review of the supporting information indicates the rich variety of environmental education centers operating or proposed in Minnesota and the commitment Minnesota citizens have to promoting environmental education efforts across the state. The committee's recommendations are designed to further legislative support to complement that citizen effort.

Study Background

The 1990 Legislature mandated that the Minnesota Department of Natural Resources develop a long-range plan for the development and coordination of environmental education centers statewide. With funding provided by the Minnesota Legislature as recommended by the Legislative Commission on Minnesota Resources, the Department of Natural Resources developed a study and survey plan for environmental education centers.

A study committee composed of environmental education center administrators and state agency representatives oversaw all portions of the study's development. The recommendations contained in this study represent the consensus opinion of committee members. Surveys and data development, along with recommendation writing for the report, took place from February 1991 to January 1992.

Part I.

Committee Discussion of Facility Type, Recommendations & Rationale

ENVIRONMENTAL EDUCATION CENTER STUDY:
COMMITTEE DISCUSSION OF FACILITY TYPE, RECOMMENDATIONS & RATIONALE

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COMMITTEE DISCUSSION OF FACILITY TYPE, RECOMMENDATIONS & RATIONALE

I. Background

This portion of the Environmental Education Study, part one, contains the committee's discussion about the various types of Environmental Education Centers, their primary markets, and their mission. This part of the study concludes with the committee's recommendations for legislative consideration and provides the rationale for each recommendation.

The Environmental Education Center Committee developed its recommendations over a three month period. The recommendations represent consensus among members of the group on workable and effective means to increase field-based environmental education opportunities for Minnesota residents. Each recommendation includes a discussion of the reasons for each request, based on survey data, focus group sessions, and other supporting study data. The rationale for recommendation #4, capital development and improvement requests, is contained in Section IV on page 13. In this section, the justification for capital requests is presented by each major facility category.

For the sake of process efficiency, it was impossible to have every facility type and administrator represented as a committee member. In developing their recommendations, committee members worked to represent all interests and facilities, not just their own. Committee members and their representatives attempted as much as possible to contact their fellow environmental education center operators and incorporate their views into this report.

To facilitate review of the recommendations, readers should familiarize themselves with the Appendices attached to Part I of this report. Appendix A displays criteria for a full service environmental education center. These criteria have been developed by the Minnesota Environmental Education Administrators Group. The reader may wish to review how the different types of environmental education centers (e.g., day-use, residential, camps, museums, zoos, special facilities) are grouped.

This chart is designed to give the reader a better understanding of the mix of field-based environmental education centers.

Appendix B shows a distribution of Minnesota's population based on the 1990 census. Appendix C contains a list of Environmental Education Center Market Segments (major markets for each specific type of environmental education center are described in Section II below). Appendix D depicts the trend in K-12 individuals as compared with other Minnesota residents through the year 2000. Appendix E depicts current and possible sites for day use facilities. Appendix F contains a copy of the Minnesota 1990 Environmental Education Act. The reader should refer to these Appendices when reviewing Section IV. Capital Development & Improvement Rationale & Recommendation Details (page 13). Parts II and III of this report, containing the supporting study data, should be reviewed as well. Appendix G contains a list of study committee members as well as DNR and other state agency staff who participated in the study.

II. Discussion of Facility Type, Mission & Markets

There are many varieties of environmental education centers. Despite the differences among facilities they share a common goal:

> *The mission of environmental education centers is to deliver outcome-based comprehensive environmental education to all Minnesota citizens.*

For the purposes of this study, committee members placed the various types of environmental education facilities into three primary categories: 1) Day-use (parks and nature centers); 2) Zoos, Museums, and Special Emphasis Facilities; and, 3) Residential Centers (environmental learning centers and camps). The full committee formed small groups to assess each category.

These small groups developed a facility-specific mission statement and identified their primary markets. With this information, study data, and professional expertise, small group participants developed recommendations and rationale for review by the entire committee. After several meetings during which recommendations were refined or changed, the full committee researched consensus on the recommendations for each facility type.

The following discussion of facility type, mission, and markets for each category is designed to give the reader a better understanding of the educational niche each type of center occupies and the means it uses to provide field-based environmental education.

A. Day Use (Parks & Nature Centers) Description

Description of Type

Day use nature centers and park facilities have been in some circumstances treated separately. After reviewing the survey findings and discussing recommendations, however, the committee found that this distinction was not useful for attempting to address current and future environmental education needs of Minnesota's citizens.

Throughout this study, "day use nature center" is the term applied to nature centers in populated areas. These facilities provide low-cost, accessible environmental education to large numbers of daily visitors, with the largest clientele being elementary school students. Nature centers provide expertise in environmental education and a natural setting.

Similarly, local, regional, state, and national parks have historically provided environmental education to large numbers of visitors. Some parks are located in heavily populated areas while others are located in more remote areas of the state. The clientele served has been largely defined by the availability of adequate facilities and staffing.

Parks and nature centers are more alike than different. Indeed, if a distinction needs to be made, it would be more accurate to define this distinction based upon primary clientele and their needs. For this reason, the day-use sub-committee has chosen to combine parks and nature centers into one group--day use centers--with two subdivisions: 1) Community-based day use centers; and, 2) Resource-based day use centers. (It should be noted that some day use centers may be both a community-based day use center and a resource-based day use center.)

Mission Statement

Community-Based Day Use Centers: The goal of community-based day use centers is to provide low-cost, locally accessible environmental education in a natural setting to large numbers of visitors, primarily from the local community and schools, in a manner which fosters increased understanding and appreciation of natural systems and the complex interrelationships between people and their environment. Community-based day use centers seek to accomplish this objective through diverse programs that encourage repeat visits.

Resource-Based Day Use Centers: The goal of resource-based day use centers is to provide low-cost, environmental education in a natural setting to large numbers of visitors from throughout the region, state, or nation, in a manner which encourages increased understanding and appreciation of natural systems and the complex interrelationships between people and their environment. Resource-based day use centers seek to accomplish this objective through the provision of environmental educational programs and information on Minnesota's outstanding natural resources and features and their relationship to people's activities in the past, present, and future.

Major Markets

The subcommittee found the major markets for day use nature centers to be as follows:

Community-Based Day Use Centers

Students (K-12)
Families
General Public
Youth Groups
Community (Education for youths and adults, with special emphasis on economically disadvantaged and racial minorities where appropriate).

Resource-Based Day Use Centers

General Public
Students (K-12)
Family
Youth Groups
Recreationists and Tourists

B. Museums, Zoos, and Special Emphasis Description

Description of Type

Museums, Zoos, and Special Emphasis Environmental Education Centers include facilities such as the Minnesota Zoo, Como Zoo, The Science Museum of Minnesota, The Bell Museum of Natural History, The Lake Superior Center, The Forest History Center in Grand Rapids, and The Raptor Center, to name a few. Activities that link these facilities into a common group include research, environmental science education, historical interpretation, recreational education, and display of interactive educational exhibits.

Mission Statement

Our facilities are devoted to environmental science education, hands-on experiences and scientific research. This mission is achieved through the curation of collections, and the development of programs, including both living and non-living interactive exhibits.

Major Markets

The subcommittee found the major markets of museums, zoos, and special emphasis facilities to be as follows:

K-12 Students
Families
General Public
Teachers
Youth Organizations

C. Residential Facility (Camps & ELCs) Description

Description of Type

Residential environmental education centers include facilities devoted to teaching K-post-secondary students. Additional programs offered include retreats, conferences, and educational opportunities for youth and special populations. Some facilities (ELCs) offer primarily environmental education related programs and activities while other facilities (camps) sometimes emphasize environmental education in addition to other activities. (For a list of facilities, see Part III, Section D). The common theme among these environmental education centers is that the clientele's educational experience typically includes at least one overnight stay.

Mission Statement

To provide residential facilities, professional staff and a broad natural resource base for extended (multi-day) field-based environmental education programs, which are experiential and in compliance with the guidelines embodied in the Minnesota 1990 Environmental Education Act.

Major Markets

The subcommittee found the major markets of residential facilities to be as follows:

Schools (K-12)
College Students/Interns
Youth (extra-school, camps, etc.)
Adult Workshops
Teachers (pre- & in-service)

III. Recommendations

Based upon survey data and committee discussion, the committee believes that the recommendations outlined in the study can meet the needs expressed by Minnesota residents and gain their support. The study's capital development and improvement plan

recommends a wide variety and geographic distribution of new and existing facilities which can provide very high quality environmental education experiences.

The committee believes that all portions of this integrated, well-balanced plan are critical and should be viewed as such by those legislators making the funding/implementation decisions for day use, residential, and special emphasis facilities.

The following recommendations, adopted by consensus, focus on legislative actions to enhance field-based environmental education centers' efforts in Minnesota:

1) **The state should support the development of an adequate number of environmental education centers to serve all Minnesota citizens.**

Rationale:

Both residential and day-use centers surveyed reported that lack of space prevented students from visiting their facilities. Residential and day-use centers annually turn down students due to lack of space and time. In addition, the data indicate that there is a need for environmental education centers representing certain geographic and demographic areas of the state (e.g., agricultural lands, prairies, and urban areas). There is a need for additional centers near schools.

The committee also recognizes significant existing efforts and commitments by local communities which represent both need and support for environmental education centers (e.g., Kettle River, Heron Lake, and the Forest Resource Center development efforts, etc.). In addition, the committee recognizes substantial existing investments in these efforts. These investments include money, donations of land, buildings, and community action.

To meet the goals of the 1990 Environmental Education Act it is important that an adequate number of field-based environmental education centers representing various types of ecological systems be available for student use across the state. In addition, approximately three fourths of Minnesota citizens are not school age children; these people need places to learn more about the environment as well. For example while 50% of all Minnesota adults used parks of all kinds for

environmental education, many parks do not have adequate facilities to provide environmental education experiences. The interest is there, but sufficient environmental education facilities for effective delivery are lacking. *When surveyed, a majority of Minnesota residents indicated a willingness to pay additional state income tax dollars to support environmental education.*

Costs:

Refer to recommendations #4 & #5 on pages 10 and 12 respectively.

2) All students should have access to an environmental education center as a part of their formal education.

Rationale:

The Minnesota Environmental Education Act of 1990 calls for life-long environmental learning opportunities for Minnesota residents. Environmental learning should begin at an early age. The state school system encourages this through its recent development of learner based outcomes for environmental education.

Formal education is currently the only method whereby the state can mandate environmental education. Environmental education centers, as field-based providers, have been and are becoming an integral part of many state school programs. Providing ready access to environmental education centers for students and adults is important to achieving the goals of the 1990 Act.

As supporting information in Part III of this study suggests, many Minnesota students do not have access to an environmental education center due to geographic, economic, and professional staffing constraints.

The EEC committee believes that the goals of the 1990 Environmental Education Act regarding students can most effectively be achieved through the partnership with classroom and field-based educational providers. Accordingly, the state should promote a policy of access for all students to an environmental education center.

Costs:

Refer to general recommendations #4 & #5 on pages 10 and 12 respectively.

3) **The state should allocate $12 per student per year for environmental education center experiences from the current state school aid formula to schools.**

Rationale:

The Minnesota Center for Survey Research data findings from surveys of teachers and school administrators indicate that lack of funds to pay transportation costs and center fees are major reasons teachers do not visit centers more often. Over 70% of teachers and school administrators said that money for fees and transportation costs would allow teachers to take students off school grounds for environmental education more often.

Field-based off-school site experiences are an important part of environmental education. In fact, the second of the seven outcome-based environmental educational goals developed by the Department of Education states:

> *Learners should be provided with experiences that will assist in the development of personal appreciation, sensitivity, and stewardship for the environment.*

Environmental education centers are an important element of the state's education system's effort to provide meaningful experiences, but teachers need the support to offer their students field-based experiences. Currently, no dollars are allocated from the school aid formula to assist teachers in providing environmental education. The MCSR survey of school administrators indicates that only 5 percent have budget-lines for environmental education activities. Yet the Legislature, through the 1990 Environmental Educational Act, has stated that environmental education is a priority.

Reallocation of school aids to local schools would help implement that priority. The $12.00 per student per year represents on average, one day's worth of the state

educational aid to local schools. Local schools would be able to use this money for transportation costs, site fees, or to pay other expenses related to environmental education centers. Local schools would have the opportunity to spend the money at the type of environmental education center of their choice.

Costs:

No additional costs; reallocation of current state school aid funding.

4) **The state should provide funding for phased-in capital development and improvement of environmental education facilities.**

Rationale:

Table One on page 11 titled *Environmental Education Center Capital Development Phased-In Implementation Plan* provides details on the recommended capital development and improvement funding levels through the 1998-99 biennium. The rationale for each funding amount requested is contained in *Section IV: Capital Development & Improvement Rationale & Recommendation Details*. The recommendations for capital development and improvements over the next four biennia represent the consensus of committee members on the level of funding necessary to provide an adequate system of environmental education centers for Minnesota citizens. The timeframe represents committee members agreement on what can be realistically achieved.

Overall, it is worth noting that over 80% of the teachers surveyed would like to take their students off the school grounds for environmental education experiences. Teachers cited three primary barriers to more off-ground trips: Money for transportation (76%); money for fees (71%); and, information about places to go (57%). The three major incentives for going off-grounds are: Hands-on laboratory experiences (59%) environmental-specialist guided tours (59%); and, field experiences (58%). These types of services are primary products of environmental education centers.

A review of foundations in Minnesota demonstrated that due to increases in foundation solicitation during the 1980's and

reduced foundation earnings, the private sector can not support the growth of new facilities to meet increased demand by the public or educational community. (See Part III, Section E for further discussion of foundations.)

Note that funding mechanisms including partial appropriations, matching funds, low-interest loans, grants and bonding are not specifically discussed. Committee members believe that vehicles for funding environmental education centers should be left to legislative discretion.

Cost:

Table One depicts the recommended state dollar expenditure of each funding request. Section IV. on page 13 describes each funding request in greater detail and provides the rationale for each.

EEC Study Group
General Recommendation #4

January 1992

Table One
Environmental Education Center
Capital Development Phased-In Implementation Plan
(dollars in millions)

Facility	Biennium 1992/93	1994/95	1996/97	1998/99	Total
Day Use [A]					
Metropolitan Community Based					
community/local	2.75	2.75	2.75	2.75	11.0
state park	1.10		1.10		2.2
Outstate Community Based					
community/local	2.75	2.75	2.75	2.75	11.0
state park	3.05	3.05	3.05	3.05	12.2
Outstate Resource Based					
state park	2.60	2.60	2.60	2.60	10.4
					46.8
Zoos, Museums & Special Emphasis					
Science Museum of Minnesota [B]	.21	?	?	?	.21
Lake Superior Center [C]	2.0	X	X	X	2.0
Renovation & Expansion Grants	1.0	1.0	1.0	1.0	4.0
Minnesota Zoo	.25	5.0			5.25
					11.46
Residential Facilities					
Phase I					
Construction of 1 new facility (Kettle River)	3.4				3.4
Expansion & safety measures (Long Lake, Deep Portage, Wolf Ridge)	7.2				7.2
Renovation (Mounds View North)	2.4				2.4
Phase II					
Feasibility	.25		.25		.5
Development		6.0		6.0	12.0
					25.5
	28.96	23.15	13.5	18.15	83.76

A These numbers were developed based on the possible sites listed in Appendix D; the distribution of funds between state and community facilities may change based on final site selection.

B Until the outcome of the facilities plan for which planning money is being sought is known, the Science Museum believes that it is premature to project an amount for construction of a new facility.

C The Lake Superior Center has indicated a need for $4 million in each of the 1994/95 and 1996/97 bienniums, but the study committee is not prepared to evaluate the Lake Superior Center recommendation.

5) The state should establish a biennial $4 million programming grant program for environmental education centers.

Rationale:

Environmental education centers need funding to develop displays, activity units/packages, exhibits, experiential programs, materials, and activities to enhance field-based educational activities across the state. Many of these programming activities and documents would be exportable to other environmental education centers and many would involve collaborative efforts among centers and private entities.

For example, these programming dollars could support computer-linked environmental education programs for networks of school districts as well as the development of coordinated environmental education programming throughout the state. New programs need to be developed as environmental issues emerge and our understanding of the environment changes. Programming grants would also support efforts to meet the field-based objectives of outcome-based education and support the Legislature's intent to provide life-long environmental education.

The committee recommends that 25 percent of the funds be dedicated to grants not to exceed $50,000 and that no one grant can exceed 25% of the monies available. While committee members believe that the method for distributing grant monies be left to legislative discretion, several options to consider include: 1) Formal LCMR grant proposals; 2) An Office of Environmental Education (OEE) administered program similar to the current OEE model curriculum development grants; and, 3) A program administered by an independent board overseen by a state agency (e.g., the recent LCMR funded collaborative water exhibit administered by the Science Museum of Minnesota).

Costs:

$4 million per biennium

6) The Department of Education should compile and maintain a directory of environmental education centers and distribute it to schools and other interested parties across the state.

Rationale:

Minnesota Center for Survey Research data show that 57 percent of teachers would take students off school grounds for an environmental education experience more often if they had more information on places to go. A directory of environmental education centers would assist teachers in reviewing options for non-formal environmental education to enhance their students' learning experiences.

The work on this environmental education study demonstrated the difficulty of providing a complete inventory of environmental education centers (refer to Part III, Section D of this report). Ongoing inventory efforts by the Department of Education would ensure that the list of centers is continuously updated thereby providing teachers with an accurate reference on the type of environmental education centers available. Ongoing inventory efforts would also improve the data base available to future planning and decision-making by the Office of Environmental Education.

Costs:

To be included as a part of the Office of Environmental Education annual operating budget.

IV. Capital Development & Improvement Rationale and Recommendation Details

This section discusses in detail each of the capital development and improvement funding recommendations outlined in the table above. The discussion follows the three facility categories earlier described in this report: 1) Day Use facilities; 2) Museums, Zoos, and Special Emphasis; and, 3) Residential facilities. *All of the facility-specific discussion that follows directly pertains to the dollar requests outlined in Table One on page 11.*

A. Day-Use (Parks, Nature Centers)

Recommendation Details

There should be a full-service, community-based, day-use center within one hour travel time to all Minnesota citizens; and in populated areas, at least one for every 100,000 individuals. Based on population figures and travel distances, it is estimated that there should be a minimum of 27 community-based, full-service day-use centers in the Twin cities metropolitan area and 28 in Greater Minnesota.

1a. The Twin Cities Metropolitan Area currently has 18 of the recommended 27 day use centers. Three of these facilities require major renovations while some of the others may need upgrading. At least nine new metropolitan day use centers are needed. It is recommended that priority be given to densely-populated areas with a high proportion of economically disadvantaged and racial minority populations (a minimum of six facilities).

1b. There are currently 8 of the recommended 28 Greater Minnesota day use facilities. Some need upgrades. At least 20 new Greater Minnesota day use facilities are needed.

1c. In addition, it is estimated that approximately 14 resource-based, day-use facilities are needed throughout the state to provide environmental education based upon Minnesota's unique and diverse high quality natural resources.

Rationale

The Minnesota Center for Survey Research's survey found that 81% of teachers want to take more field trips -- almost 60% wanted hands-on laboratory experiences, environmental specialist-guided tours, and/or field experiences.

A majority of teachers (69%) and residents (82%) will not drive more than 50 miles to a day use environmental

education center. Furthermore, most environmental education centers (70%) are turning people away. 50% of the general public indicated that they visit parks of some kind to learn about the environment. Accessibility and the need for the participants of environmental education programs to be able to relate these experiences to their everyday lives is critical to promoting increased environmental awareness and stewardship.

With the existence of only five full service and three less-than-full-service facilities in Greater Minnesota, most cities do not have a day use center nearby. Except for nearby state parks, residents of Albert Lea, Bemidji, Brainerd, Detroit Lakes, Duluth, Fergus Falls, Granite Falls, Hibbing/Virginia, Ortonville, Red Wing, Willmar, and Worthington must travel considerable distance to visit existing facilities. Committee members estimate that by implementing the recommended capital improvements, an additional 2.3 million adult and student visits can be accommodated. Please refer to Appendix D for a listing of existing and potential sites for day use environmental education centers.

Costs

It is recommended that $36.3 million be appropriated for upgrading and/or constructing 12 metropolitan and 21 Greater Minnesota full-service, community-based, day-use facilities. In addition, $10.5 million should be appropriated for 14 resource-based, day-use facilities. This money would be appropriated over four biennia. During each biennium, the community-based funds should be appropriated 1/3 Twin Cities metro and 2/3 Greater Minnesota to correct the existing imbalance in available facilities.

There has been a historic precedent for notable public/private partnerships with schools, local governments and private groups/foundations. It is recommended that partnership proposals be given funding priority.

B. Museums, Zoos, and Special Emphasis Facilities

Recommendation Details

The state should provide bonding monies for renovation and expansion of existing facilities and for the capital development of new facilities.

Rationale: General

In the statewide general population survey of environmental education, about 70% of respondents indicated that science/natural history museums and zoos are major or minor sources of environmental education and about 60% of respondents indicated that they were very or somewhat likely to go to these institutions to obtain additional environmental information. Science/natural history museums, zoos, and other comparable environmental education institutions play a major role in environmental education in Minnesota, yet in many instances their existing facilities and their present geographic distribution inhibit them from adequately serving the citizens of the state.

Rationale: Renovation/Expansion

Existing facilities, being heavily used resources for environmental education, are generally in need of expansion or repair. Classroom space is either antiquated or not available. Client demand has increased in a number of these existing facilities and additional classroom and educational program space is critically needed.

The Science Museum of Minnesota has made a major commitment to environmental education and research. One of the exhibit halls at the museum is devoted permanently to interpreting the changing environment of Minnesota. The museum's St. Croix Research Station coordinates environmental research projects from various governmental and academic institutions. The museum's Warner Nature Center, established in 1966, was the first of its kind to focus on environmental education for youth and families.

The Science Museum of Minnesota is a facility designed for 500,000 people, but has an annual attendance of close to one million people. The Science Museum of Minnesota has just completed the first phase of a strategic plan that concludes that its current facility not only needs space to meet visitor needs, but also lacks sufficient space for exhibits, museum personnel, and for the curation and storage of artifacts and objects.

The Bell Museum of Natural History, as a part of the University of Minnesota, has been providing environmental education to the people of Minnesota since the turn-of-the-century. The museum's urban location affords an opportunity for its programs to reach an inner-city audience. The move of the Museum's extensive research collections (legislatively-mandated for the state) to new facilities, provides opportunity for expansion of the Museum's public outreach services. Funds are needed to renovate the Museum's historic building to meet these growing needs.

The Lake Superior Zoo and Como Zoo both occupy older facilities that are unable to accommodate expanding audiences. In fact, neither have formal education spaces for use by school groups and teachers. These institutions increasingly are being looked upon to provide environmental education. Both facilities have plans to renovate older buildings for environmental education.

Rationale: New Facilities

Minnesota Center for Survey Research general population survey data indicate that 90% of respondents reported that they would be unwilling to travel more than 100 miles one way to visit these facilities. Large areas of Minnesota are beyond 100 miles of a science/natural history museum, zoo, or other comparable environmental education facility.

The environmental education survey indicates that these kinds of facilities serve as significant disseminators of environmental education and the institutions. The Duluth/Superior metropolitan area and the Arrowhead region have no major science or natural history museums. The Twin Cities are beyond the distance that nearly all respondents are willing to travel.

The Lake Superior Center through its hands-on exhibits and experiential programs already is becoming a major catalyst for informing local citizens and visitors about the environmental issues facing Lake Superior, the preeminent natural resource of northeastern Minnesota. As evidenced by a strong and growing capital campaign, the Lake Superior Center already has considerable private support in the business and philanthropic communities. The Center is an excellent opportunity for the creation of a public/private partnership to further advance environmental education in the Arrowhead region through the development of a new interpretive center.

The Minnesota Zoo includes environmental education as one of its cornerstones. The Minnesota Zoo has been encouraged by the Minnesota Legislature to expand its facility to include overnight capabilities. A residential complex was a component of the original Zoo design.

As a state agency, the Minnesota Zoo has a commitment to the citizens and school students of Minnesota. During the 1990-91 school year, over 100,000 students and teachers used the Zoo. Current student visits to the Zoo average less than three hours. An overnight facility would ensure intensive environmental education opportunities for teachers, students, and youth leaders from the metro and Greater Minnesota regions. Partnerships could be formed with other "field trip" and environmental education destinations such as the Science Museum of Minnesota and the Minnesota Historical Society to provide more comprehensive educational experiences from groups visiting the metro area.

Costs

The Science Museum of Minnesota requests $210,000 for planning costs to implement the second phase of it's strategic plan.

The Lake Superior Center requests $2 million for the 1992/93 biennium for development of new facilities.

The Minnesota Zoo requests $250,000 for a feasibility study for the 1992-93 biennium and $5,000,000 for a residential building for the 1994-95 biennium.

Committee members also recommend that the Legislature provide $1 million each biennium for planning, renovation, and expansion of other existing facilities.

C. Residential Centers (Camps and ELCs)

Recommendation Details

1) **The state should provide $13 million during the 1992/93 biennium to support facility completion at five residential environmental learning centers: Deep Portage, Kettle River, Long Lake, Mounds View North, and Wolf Ridge.**

2) **The state should provide $250,000 during the 1992/93 biennium and $250,000 during the 1996/97 biennium for planning and feasibility studies for four additional environmental learning centers.**

3) **The state should provide $6 million during the 1994/95 biennium and $6 million during the 1998/99 biennium to fund development of four new environmental learning centers based on the outcome on the feasibility studies described in point 2 above.**

Rationale: General

The state needs more residential environmental education programs throughout the state. The facility inventory survey indicates that the most recognized residential programs in the state turn people away for lack of space. When development and program support can be found, young programs grow quickly. For example, the Environmental Education Programs at Camp Courage and Deep Portage each have increased user groups by 20% annually during the last three years. There is a growing demand for residential-based environmental education programs.

Rationale: Phase I Funding Expansion & New Facilities

During the current school year (1991-92) more than 41,000 children from more than 500 schools will each experience from 48 to 72 consecutive hours at one of six residential centers. Two of the six are camps which have a primary mission other than environmental education. The $13 million funding request for FY 92/93 would double residential environmental education center student capacity.

Wolf Ridge is operating at capacity and has a waiting list of schools that want to occupy facilities proposed as a part of the Center's second capital development phase. More than 200 schools have contacted Wolf Ridge and determined that being on a waiting list is futile. Those 200 schools alone have the potential to fill the existing facilities. ($2.4 million request)

Long Lake is operating at capacity and regularly turns away schools. Long Lake's food service facility does not meet health and safety standards; nor is it accessible to people with disabilities. ($2.4 million request)

Mounds View North has a critical need to renovate its 55 year old facilities to conform to safety, handicapped access and health codes. Program expansion is difficult due to facility limitations. Continued programming at Mounds View North is constrained due to these facility limitations. The center's building program is justified by current and projected demands of client groups. ($2.4 million request)

Deep Portage is unable to meet demand for certain periods of the school year due to lack of adequate sleeping quarters. ($2.4 million request)

Kettle River has completed site and facility development plans. An independently conducted feasibility study showed that a near capacity number of schools will schedule use of the facility once completed. ($3.4 million request)

Rationale: Phase II Feasibility & Development of New Facilities

There is strong community support for development of residential environmental education centers across the state

(e.g., efforts to build the Forest Resource Center, Lanesboro; Heron Lake ELC in Jackson County; Prairie Woods ELC, Kandiyohi County; Agassiz ELC, Fertile, Minnesota; and, a residential facility at Whitewater State Park). These initiatives need state support to conduct thorough feasibility studies and planning efforts prior to additional public investment.

Upon completion of feasibility studies indicating additional need and community support, the committee recommends that the state provide funding for development of new residential centers. Geographical distribution and ecological representation are major criteria for the location of new centers. Priority sites for these facilities include the Minneapolis/St. Paul area, the hardwood forest, the prairie, and agricultural land.

Rationale: General (continued)

The $25.5 million investment in residential centers during the next four biennia will allow an additional 100,000 students to attend residential environmental learning centers each year. These students will experience a total of more than 3,200,000 hours of direct hands on environmental education. The direct local annual economic activity of nine full service residential learning centers will total more than $15 million.

Costs

$13 million for 1992/93 biennium for Wolf Ridge, Long Lake, Mounds View North, Deep Portage, and Kettle River.

$250,000 for each of the 1992/93 and 1996/97 biennia for feasibility and planning studies.

$6 million for each of the 1994/95 and 1998/99 biennia to fund development of four new residential facilities.

APPENDICES

This Criteria Developed by the Minnesota Environmental Education Administrators Group

Appendix A
January 1992

Criteria for a Full Service Environmental Education Center

1. A formal Environmental Education mission statement with a strategic/long range plan.
2. Established public or non-profit status.
3. Qualified paid professional Environmental Education staff (at least one full time equivalent).
4. An ongoing Environmental Education (minimum 9 months/year) program consistent with the current Minn. Environmental Education plan.
5. A significant level of land and building resources (real property).
6. Separate and identifiable Environmental Education budget.

Museums, Zoos and Special Facilities

1. General public, families and K-12 students provide majority of visitors.
2. Facilities display living and nonliving science exhibits and programs.
3. Environmental education is incorporated into scientific research and educational recreations.

Day Use

Resource Based (e.g., parks)

1. Significant resource base in context of the administrative jurisdiction.
2. Enabling legislative mandate or city/county policy.
3. Quantifiable resource management efforts.
4. Clientele and accessibility.

Community Based (e.g., nature centers)

1. Clientele of all ages and multi cultural.
2. Serve as an Environmental Education resource.
3. Local community emphasis.
4. Frequent repeat visitation.
5. Strong ties with local schools.
6. Immediate accessibility - population proximity.

Residential

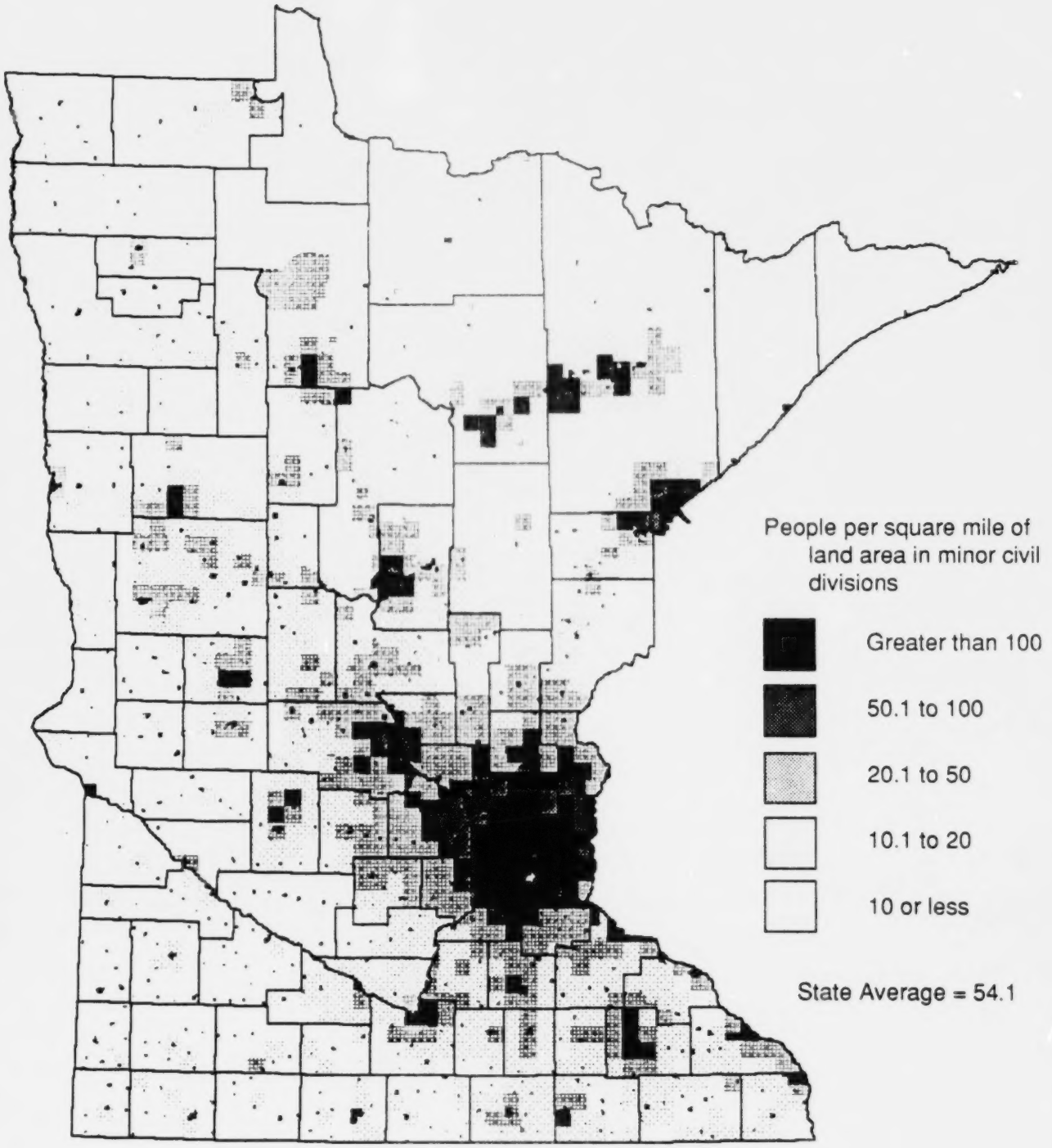
Camps

1. ACA accredited.
2. Facility licensed by the State Health Department.
3. Formal Environmental Education committee as a function of Board of Directors.
4. Qualified staff will include administration, instructors, food service and maintenance.
5. Accommodations must include structures for eating, sleeping and learning.
6. 1:25 ratio instructor to student.
7. Formalized training for seasonal and part-time teaching staff.

Environmental Learning Centers

1. NCA accredited.
2. 80% of school year program devoted to K-post secondary.
3. 80% of summer program devoted to environmental education.
4. 80% of budget is devoted to environmental education.
5. Accommodations must include structures for eating, sleeping and learning.
6. Qualified staff will include administration, instructors, food service and maintenance.
7. Full service environmental education instructional program.

Population Distribution, 1990


People per square mile of land area in minor civil divisions
Greater than 100
50.1 to 100
20.1 to 50
10.1 to 20
10 or less
State Average = 54.1

Source: U.S. Bureau of the Census, 1990.

Environmental Education Center Market Segments

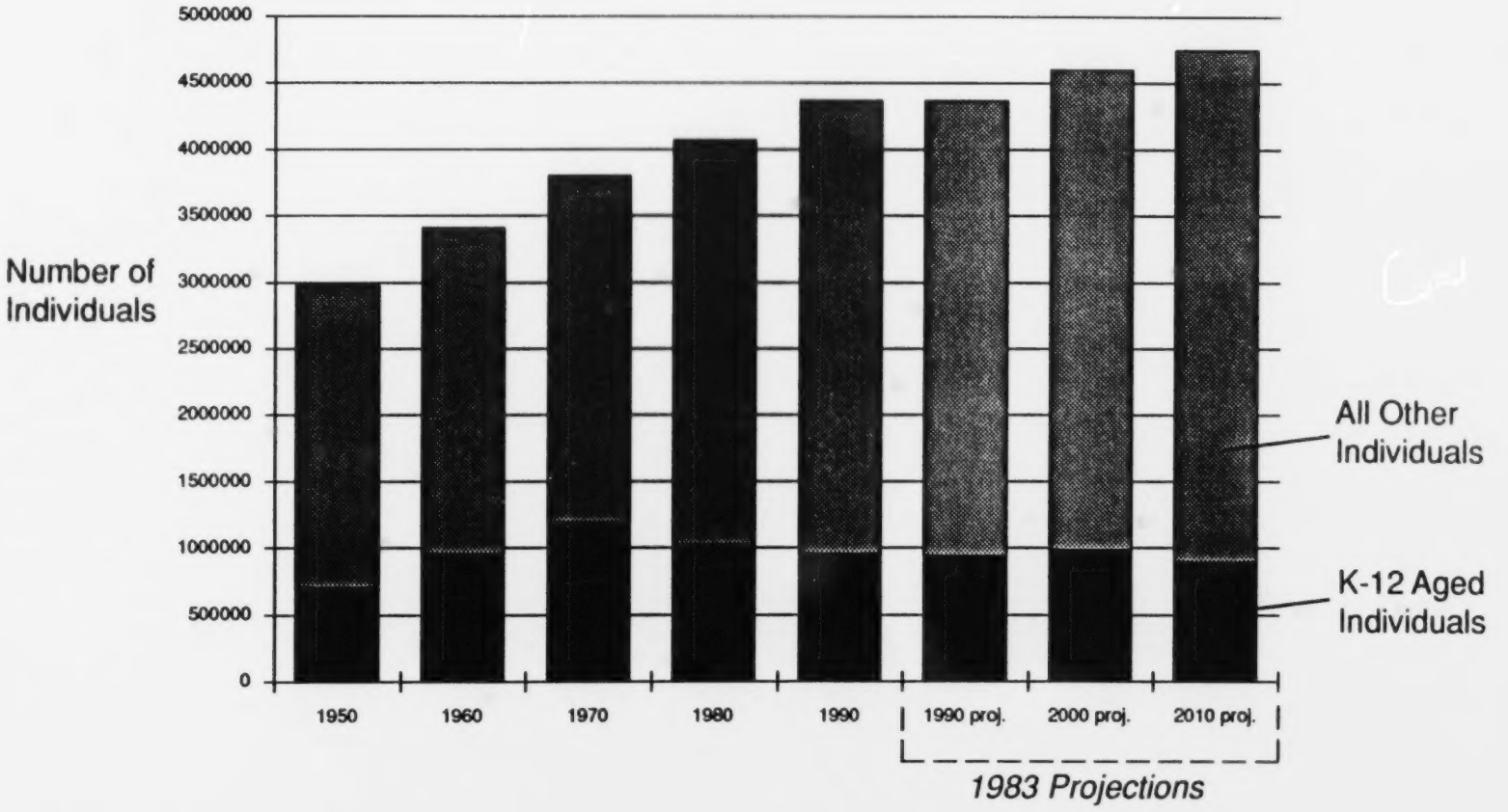
1. Schools (public/private & parochial)

   A. Preschool-K
   B. K-3
   C. Intermediate 4-6
   D. Middle School 5-8
   E. Junior High 7-9
   F. Senior High 10-12
   G. Special Education
   H. Gifted and Talented

2. Inner-city
3. Multicultural/Racial Minorities (e.g. South East Asians, etc.)
4. Families
5. General Public (anyone)
6. Suburban Populations
7. Rural Populations
8. Youth Organizations (e.g. Scouts)
9. Teachers - Elementary
10. Colleges
11. College Students
12. Senior Citizens, Elder Hostels
13. Neighborhood Groups/Local Community Groups
14. Sporting Groups
15. Support for Adult Workshops (facility & some programs)
16. Youth at Risk
17. Elected Officials
18. American Indians
19. International Students
20. Scientists

21. Recreational Professionals
22. Agricultural Community
23. Intern Programs
24. Recovery Groups
25. Watershed Organizations
26. Civic Organizations
27. Recreation Specialties (e.g. cross country skier)
28. Environmental Organizations
29. Tourists/Tourism Operators
30. Parents of Children in Attendance
31. Business Community
32. Adult Community Education
33. Volunteers
34. Local Art Schools
35. Campers
36. Latch-Key Kids/After School Care Kids
37. Youth and Adult Care Facilities
38. Youth Community Education
39. Participants of Summer Youth Camps
40. Group Camps
41. Members
42. Pre-Service Teachers
43. Special Needs Population

Trend in Number of K-12 Aged Individuals Compared With Remainder of Minnesota Population



Sources: U.S. Bureau of the Census, 1950 to 1990 Census of Population.
Minnesota Population Projections: 1980-2010. State Demography Unit, Minnesota Department of Energy, Planing and Development, 1983.

Appendix D

Appendix E
January 1991

DAY-USE SITES & POSSIBLE SITES

(* = major renovation of existing facility needed)

COMMUNITY-BASED FACILITIES IN THE SEVEN COUNTY METROPOLITAN AREA

I. CURRENT FULL SERVICE FACILITIES IN MINNEAPOLIS/ST. PAUL PROPER

None

II. CURRENT FULL SERVICE FACILITIES IN THE MINNEAPOLIS/ST. PAUL SUBURBAN AREA

1. Belwin Outdoor Education Lab - Afton (school district)
2. Carpenter Nature Center - Hastings (private)
3. Coon Rapids Dam - Coon Rapids (Hennepin Parks)
4. Dodge Nature Center - West St. Paul (private)
5. Eastman Nature Center - Osseo (Hennepin Parks)
6. Lowry Nature Center - Victoria (Hennepin Parks)
7. Maplewood Nature Center - City of Maplewood
8. Richardson Nature Center - Bloomington (Hennepin Parks)
9. Springbrook Nature Center - City of Fridley
10. Tamarack Nature Center - White Bear Lake (Ramsey County)
11. Warner Nature Center - Marine on St. Croix (SMM)
12. Westwood Hills Environmental Education Center - City of St. Louis Park
13. Wood Lake Nature Center - City of Richfield
14. Minnesota Valley National Wildlife Refuge (USF&WS) - Bloomington

III. CURRENT LIMITED SERVICE FACILITIES IN MINNEAPOLIS/ST. PAUL

1. Crosby Farm Park Nature Center - St. Paul
2. Pike Island Interpretive Center - Fort Snelling State Park

IV. CURRENT LIMITED SERVICE FACILITIES IN THE MINNEAPOLIS/ST. PAUL SUBURBAN AREA

1. French Regional Park - Plymouth (Hennepin Parks)
2. Harriet Alexander Nature Center - Roseville
3. Starring Lake Outdoor Center - Eden Prairie
4. William O'Brien State Park - Northern Washington County

V. POSSIBLE SITES FOR FULL SERVICE FACILITIES

A. Minneapolis/St. Paul

1. Como Park (adjacent to Zoo) - St. Paul
2. Crosby Farm Park - St. Paul
3. Fort Snelling State Park
4. Fuji Ya Building (renovate) - Central Minneapolis
5. Lilydale Park - St. Paul
6. Minnehaha Park - South Minneapolis
7. Wirth Park - North Minneapolis

POSSIBLE SITES FOR FULL SERVICE FACILITIES (continued)

B. Suburban Area

1. Afton State Park - Afton
2. Anderson Lakes - New site/building for Richardson Nature Center Bloomington (Hennepin Parks)
3. Baker Park - Maple Plain (Hennepin Parks)
4. Cleary Lake Park - Prior Lake (Hennepin Parks)
5. Joseph Wargo Nature Center - Lino Lakes (Anoka County)
6. Lebanon Hills - Eagan (Dakota County)
7. MN Valley Trail State Park - Scott County/Carver County,
8. William O'Brien State Park - Northern Washington County

COMMUNITY-BASED, OUTSTATE FACILITIES

I. CURRENT FULL-SERVICE FACILITIES

1. Hormel - Austin Area
2. Oxbow Park and Zoo - Byron Area
3. Quarry Hill - Rochester Area
4. Regional Science Center - Moorhead Area
5. River Bend - Faribault Area

II. CURRENT LIMITED SERVICE FACILITIES

1. Forest Resource Center - Lanesboro
2. Heritage Nature Center - St. Cloud
3. Itasca State Park
4. Lake Bemidji State Park - Bemidji
5. Lake Washington Nature Center - Mankato
6. Mille Lacs Kathio State Park
7. Myre-Big Island State Park - Albert Lea
8. Sibley State Park - Willmar
9. Whitewater State Park - Rochester/Winona
10. Wild River State Park

III. POSSIBLE COMMUNITY-BASED FULL SERVICE FACILITIES

(*NFS* = not full service now; *P* = currently proposed)

1. Albert Lea - Myre-Big Island State Park
2. Bemidji - Lake Bemidji State Park
3. Brainerd - Mille Lacs Kathio State Park
4. Detroit Lakes - Maplewood State Park or Glendalough State Park or Tamarac National Wildlife Refuge
5. Duluth - Hartley Nature Center *(P)* or University of Minnesota Duluth Outdoor Program
6. Fairmont Area
7. Grand Marais - Grand Portage State Park
8. Grand Rapids Area
9. Granite Falls - Lac Qui Parle
10. Grant County - Lawndale ELC *(P)*
11. Hibbing/Virginia - McCarthy Beach State Park
12. Hutchinson Area

III. POSSIBLE COMMUNITY-BASED FULL SERVICE FACILITIES (continued)

13. Kandiyohi County - Prairie Woods ELC *(P)*
14. Lanesboro - Forest Resource Center *(NFS)*
15. Mankato - Lake Washington Nature Center *(NFS)* or Minneopa State Park
16. Marshall - Camden State Park
17. New Ulm - Flandrau State Park
18. Ortonville - Big Stone Lake State Park
19. Otter Tail County - Prairie Wetland Learning Center *(P)*
20. Red Wing - Learning Center or Frontenac State Park
21. St. Cloud - Heritage Nature Center *(NFS)*
22. Thief River Falls - Agassiz ELC *(P)*
23. Warroad - Zippel Bay State Park
24. Willmar - Sibley State Park
25. Winona - Upper Mississippi Learning Center *(P)* or Whitewater State Park
26. Worthington - Heron Lake ELC *(P)*
27. Wright County - Wright County Ney Memorial Park Reserve

RESOURCE-BASED, FULL-SERVICE FACILITY POSSIBILITIES

1. Blue Mound State Park
2. Cascade River State Park
3. Crow Wing State Park
4. Forestville State Park
5. Gooseberry State Park
6. Itasca State Park
7. Jay Cooke State Park
8. Lake Bronson State Park
9. Lake Carlos State Park
10. Lake Shetek State Park
11. Nerstrand Woods State Park
12. St. Croix State Park
13. Savanna Portage State Park
14. Tower-Soudan State Park
15. Wild River State Park

Minnesota State Parks

CHAPTER 126A

ENVIRONMENTAL EDUCATION

126A.01 Environmental education goals.
126A.02 Office of environmental education.
126A.03 Staff.
126A.04 Powers and duties.
126A.05 Environmental education coordination procedures.
126A.06 Environmental education resource centers.
126A.07 Relations with the department of education.
126A.08 Establishment of environmental education program; characteristics; implementation; in-service.
126A.09 Integrated curriculum development models.
126A.10 Research and development sites.
126A.11 In-service teacher training.
126A.12 Reporting.

126A.01 ENVIRONMENTAL EDUCATION GOALS.

The environmental education program described in this chapter has these goals for the pupils and other citizens of this state:

(1) to understand ecological systems;

(2) to understand the cause and effect relationship between human attitudes and behavior and the environment;

(3) to be able to analyze, develop, and use problem-solving skills to understand the decision-making process of individuals, institutions, and nations regarding environmental issues;

(4) to be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action;

(5) to understand the potential complementary nature of multiple uses of the environment;

(6) to provide experiences to assist citizens to increase their sensitivity and stewardship for the environment; and

(7) to provide the information citizens need to make informed decisions about actions to take on environmental issues.

History: *1990 c 595 s 1*

126A.02 OFFICE OF ENVIRONMENTAL EDUCATION.

Subdivision 1. **Director.** The director of environmental education is appointed by the commissioner of the state planning agency. The director may initiate, develop, implement, evaluate, and market informal environmental education programs; shall promote state government and private sector policy that is consistent with the environmental education programs established in section 126A.08; and may coordinate informal environmental education with the K-12 and post-secondary environmental education programs developed by the department of education and the state's post-secondary institutions.

Subd. 2. **Board members.** A 17-member board shall advise the director. The board is made up of the commissioners of the state planning agency; department of natural resources; the pollution control agency; the department of agriculture; the department of education; the chair of the board of water and soil resources; the executive director of the higher education coordinating board; the executive secretary of the board of teaching; the director of the extension service; and eight citizen members representing diverse interests appointed by the governor. The governor shall appoint one citizen member from each congressional district. The citizen members are subject to section 15.0575. Two of the citizen members appointed by the governor must be licensed teachers currently teaching in the K- 12 system. The governor shall annually designate a member to serve as chair for the next year.

History: *1990 c 595 s 2*

126A.03 STAFF.

The state planning agency shall provide staff and consultant support for the office of environmental education. The support must be based on an annual budget and work program developed by the director and certified to the commissioner of the state planning agency by the chair of the office's advisory board. The director may request staff support from any other agency of the executive branch as needed to execute the responsibilities of the director.

History: *1990 c 595 s 3*

126A.04 POWERS AND DUTIES.

Subdivision 1. **Planning.** The director may develop a plan and establish a continuing planning process to achieve the goals for environmental education. The director may integrate the environmental education plans, strategies, and policies developed by the department of education and post-secondary institutions when developing their planning process and plan.

Subd. 2. **Legislation.** The director may review proposed legislation and funding requests relating to informal environmental education for consistency with the plan. The director shall also develop with the department of education and post-secondary institutions a process for coordinating the development of K-12 and post-secondary environmental education legislation and funding requests with the plan.

Subd. 3. **Environmental education conference.** The director may conduct an environmental education conference every other year to bring together the environmental education community to identify future issues, ascertain needs, and set priorities and goals. The results of the conference may be used in revising the plan.

Subd. 4. **Advisory committees.** The director shall establish advisory committees and a process to receive input from committees and others on K-12, post-secondary, and informal environmental education programs and needs, priority issues, and target audiences.

Subd. 5. **Grants.** The director may apply for, receive, and allocate grants and other money for environmental education.

History: *1990 c 595 s 4*

126A.05 ENVIRONMENTAL EDUCATION COORDINATION PROCEDURES.

Subdivision 1. **Communication.** The director may establish and maintain methods of communication between environmental education producers, distributors, and consumers to encourage effective and timely programs.

Subd. 2. **Technical assistance.** The director may provide technical assistance to agencies and organizations for effective design and marketing of environmental education programs and for the writing of environmental education components in legislative proposals.

Subd. 3. **Marketing and publicity.** The director may provide marketing and publicity for environmental education programs of other agencies and organizations, within the priorities developed in the plan.

History: *1990 c 595 s 5*

126A.06 ENVIRONMENTAL EDUCATION RESOURCE CENTERS.

Subdivision 1. **Establishment.** The director may establish environmental education resource centers throughout the state as needed. The environmental education resource centers shall serve as a source of information and programs for citizens, provide ongoing contact with the public for feedback to the director on regional environmental education issues and priorities, and serve as distribution centers for environmental education programs.

Subd. 2. **Duties.** The resource centers shall:

(1) implement the programs and priorities of the office as defined in the plan;

(2) convey regional program priorities to the director;

(3) evaluate regional implementation of environmental education programs and report to the director on the evaluations;

(4) provide regional liaison and coordination for organizations, agencies, and individuals providing environmental education programs on particular issues;

(5) be a distribution and publicity center for agencies, environmental organizations, environmental learning center publications, programs, and services;

(6) be a central source of information for citizens interested in issues that are the responsibility of many agencies, boards, task forces, and organizations;

(7) provide technical assistance to local and state organizations and agencies on program design, promotion, and publicity to reach the chosen target audiences; and

(8) assist the educational cooperative service units by collecting and distributing environmental education teaching materials, displays, computer programs, resource person lists, and audio-visual aids, and provide assistance with teacher training workshops and programs on request.

History: *1990 c 595 s 6*

126A.07 RELATIONS WITH THE DEPARTMENT OF EDUCATION.

Subdivision 1. **Cooperation and support.** The director shall cooperate with and support the environmental education program developed by the state board of education and the department of education.

Subd. 2. **List.** The cooperation and support must include, but is not limited to, the items mentioned in the list in this subdivision.

(a) The director shall encourage all environmental education programs developed for pupils and other citizens to strive for achievement of the goals and the environmental learner outcomes developed by the department of education.

(b) The regional resource centers shall collect, house, promote, and circulate environmental education materials, displays, audio-visual aids, and computer materials for use by the educational cooperative service unit environmental education coordinators.

(c) The resource centers shall evaluate, promote, and distribute to educators materials produced by other agencies and organizations.

History: *1990 c 595 s 7*

126A.08 ESTABLISHMENT OF ENVIRONMENTAL EDUCATION PROGRAM; CHARACTERISTICS; IMPLEMENTATION; IN-SERVICE.

(a) The department of education shall assist in establishing environmental education programs in all public elementary and secondary schools.

(b) The environmental education program must be interdisciplinary, integrated into the curriculum, and outcome-based.

(c) The program must be implemented through the department of education's learner outcome, assessment and feedback, and instructional processes.

(d) The department of education shall assist school districts, education districts, and other education organizations to develop environmental education policies that maximize the environmental education in-service teacher training in educational cooperative service unit regional offices.

History: *1990 c 595 s 8*

126A.09 INTEGRATED CURRICULUM DEVELOPMENT MODELS.

The department of education shall develop curriculum integration models for a learner outcome-based environmental education program. The models must include:

(1) the specific environmental education and curriculum integration goals to be attained;

(2) the various options to achieve the goals;

(3) a hierarchy of learner outcomes composed of state learner goals; integrated learner outcomes; program learner outcomes; and course, unit, and lesson learner outcomes;

(4) mechanisms to communicate the models;

(5) an objective process to evaluate the progress to establish and implement a model integrated environmental education curriculum;

(6) alternatives to evaluate pupils' environmental education progress at the classroom level; and

(7) methods to assess pupils' environmental learning.

History: *1990 c 595 s 9*

126A.10 RESEARCH AND DEVELOPMENT SITES.

(a) Sites selected under Laws 1989, chapter 329, article 7, section 21, or other school district sites may be used to demonstrate how environmental education outcomes can be integrated into a comprehensive education curriculum.

(b) The department of education, in consultation with the director, shall assist the research and development sites to plan and implement integrated environmental education programs.

History: *1990 c 595 s 10*

126A.11 IN-SERVICE TEACHER TRAINING.

The department of education is responsible for in-service teacher training in environmental education.

History: *1990 c 595 s 11*

126A.12 REPORTING.

(a) Beginning June 30, 1992, the department of education shall submit a biennial report on its environmental education program to the legislature and the governor.

(b) The report must:

(1) describe the progress of environmental education learner outcome development and implementation in the public elementary and secondary schools;

(2) describe in-service involvement and assistance at the state and local level;

(3) evaluate the efforts of the research and development sites to implement integrated environmental learner outcome-based education; and

(4) contain an implementation plan to assist school districts in the establishment of an environmental education program in all public elementary and secondary schools.

History: *1990 c 595 s 12*

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SE

E.E.C. 2000:
A Study of Environmental Education Centers

As required by 1990 Laws of Minnesota; Chapter 610, Section 20, Article 1, Subdivision 7: "The commissioner in cooperation with other affected agencies and residential and nonresidential learning center directors shall develop a long-range plan for the development and program coordination of environmental learning centers statewide. The plan must focus on identifying programming needs, geographic areas to locate facilities, capital cost estimates for development and creation of a phased-in implementation strategy. The plan must be completed for presentation to the Legislature by January 1, 1992."

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee

January 1992

"Funding for this project approved by the Minnesota Legislature (LCMR Contingency Account, F.Y. 1991; M.L. 1991 Chapter 254, Sec. 14, Subd. 5(a) as recommended by the Legislative Commission on Minnesota Resources from the Minnesota Environment and Natural Resources Trust Fund)."

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E.E.C. 2000:
A Study of Environmental Education Centers

Parts II & III

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee

January 1992

"Funding for this project approved by the Minnesota Legislature (LCMR Contingency Account, F.Y. 1991; M.L. 1991 Chapter 254, Sec. 14, Subd. 5(a) as recommended by the Legislative Commission on Minnesota Resources from the Minnesota Environment and Natural Resources Trust Fund)."

Parts II & III: Summary of Supporting Information & Supporting Information

Prepared by:

Minnesota Department of Natural Resources
Office of Planning, under the guidance of the
Environmental Education Committee
January 1992

This portion of the Study of Environmental Education Centers contains **Parts II and III:**

II. Summary of Supporting Information

III. Supporting Information

Section A. Discussion of Data Gathering Process

Section B. Analysis of Surveys of Environmental Education in Minnesota: Residents, Teachers, and Administrators

Section C. Facility Focus Group Results

Section D. Environmental Education Center Inventory Data

Section E. Private Foundation Funding

For a copy of *Part I, Committee Discussion of Facility Type, Recommendations, and Rationale,* please contact the Department of Natural Resources, Office of Planning at (612) 296-0565.

II. Summary of Supporting Information

Summary of Supporting Information

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SUMMARY OF SUPPORTING INFORMATION

The following discussion highlights key findings contained in the study's Section III: Supporting Information. Each key point is briefly stated; for more information about each, please refer to the relevant supporting data.

Section A - Discussion of Data Gathering Process

1. Data gathering for MCSR surveys was a part of a joint effort for the Environmental Education Center study as well as for other LCMR-sponsored education initiatives.

2. Four primary sources of supporting information were used: 1) Minnesota Center for Survey Research Data; 2) Environmental Education Center Facility Focus Group Responses; 3) Environmental Education Center Inventory Surveys; and, 4) A Review of Private Foundation Funding Sources.

3. The responses to the inventory survey are very diverse; a wide variety of facilities conduct environmental education in Minnesota.

4. When reviewing data, it is recommended that the reader look for facility niches, gaps or weaknesses in educational services, barriers to environmental education, opportunities for partnerships and opportunities for local involvement.

Section B - Analysis of Surveys of Environmental Education in Minnesota: Residents, Teachers and Administrators

Introduction

1. Survey goals were to identify specific environmental education programming and facility needs.

2. Mail surveys were sent to three populations: 1) 2,400 Minnesota residents; 2) 1,816 Minnesota K-12 teachers; and, 3) 800 Minnesota school administrators.

3. The survey response rate was excellent: 66% for residents, 73% for teachers, and 72% for school administrators.

General Comments on Tabulation Results

1. The survey includes an oversample of 216 environmental education contacts. Responses from contacts for the most part did not vary greatly from teachers in general; major differences between the two samples are discussed when they occur.

2. Analysis focuses on issues that pertain primarily to environmental education centers; data related to classroom activities are generally not discussed since these data concern issues beyond the scope of this study.

Analysis of Survey Results: Residents with Comparisons to Teachers & Administrators

<u>Environmental Topics</u>

1. Minnesotans have traditional views on what they believe are environmentally-related topics. Data suggest that residents may not fully understand more complex environmental topics such as 'population growth' or 'biological diversity'.

2. Most residents, teachers, and administrators rate themselves as 'very' or 'somewhat informed' about environmental issues.

3. Over two-thirds of the teachers and administrators indicated a strong interest in environmental issues compared to less than one half of the residents sampled.

4. Environmental contacts were more likely to rate themselves as 'very informed' and 'very interested' in environmental issues than the general population of teachers.

Information Sources

5. More than 90% of residents, teachers, and administrators indicated that the media were major or minor sources of environmental information.

6. State and local governments were also likely sources of information.

7. Information sources not used as often include 'large corporation', 'businesses in your community', 'overnight environmental learning centers', 'nature centers not located within parks' and 'other local parks'.

8. The information sources used by respondents are not surprising since many of the differences in use may be explained by ease of access (e.g., the media are easily accessible relative to a residential center). Other information sources not used as often, such as day-use facilities, focus on school age children, not adults. Parks, nature centers, and local businesses also may not be as accessible to adults whose time is primarily spent at the work site.

9. Comparing the responses of Minnesota residents with national responses concerning information sources indicates that Minnesota residents use various sources more often than the national public. This in turn suggests that Minnesota residents are more interested in environmental issues than the national population.

General Public Use of Environmental Education Places

10. The general public visits parks of all types most often (57.4%) followed in order by zoos (11.4%), day-use centers, (9.9%), museums (7.8%), and overnight environmental centers (1.2%). 'Other facilities/sites' was checked by 12.3% of the respondents.

11. The most important reason for not visiting zoos, museums and parks was 'no time'. An additional

major reason for not visiting zoos and museums was 'too far away' which is an indicator of no time.

12. 'No time' was also a major factor for not visiting overnight (residential) centers and day-use centers. Other major factors included 'unaware of them' and 'no interest'. It appears that user awareness is an important barrier to use of overnight and day-use facilities. (Refer to the discussion in Part III, Section B, pages 11-12.)

13. A majority of residents are unwilling to travel more than 50 miles to museums, zoos, parks, overnight (residential) environmental centers, and day-use centers. These data suggest 'lack of time' is a major consideration on whether to visit a facility -- long distances equal long travel times.

Taxes to Improve Environmental Education

14. 58 percent of residents were willing to pay additional income taxes each year to pay for environmental education.

15. Half of those willing to pay additional taxes indicated a desire to fund additional programs, transportation costs, and teaching materials.

16. Only a third of those willing to pay additional taxes indicated a desire to fund equipment, hire more teachers, or build more facilities.

Teachers & Administrators: Responses About Their Knowledge

1. About 77 percent of teachers said they 'definitely' or 'probably' know enough about environmental issues to incorporate them into their own teaching. 89 percent of the oversample contacts said they 'definitely' or 'probably' know enough to teach environmental subjects as compared to 63 percent of the randomly-selected teachers.

2. Most training in environmental education for teachers, environmental education contacts, and administrators

is 'personal experience'. Less than a third of the training that environmental education contacts receive is pre-service.

Responses by Teachers Who Conducted Environmental Education

1. 91 percent of environmental education contacts conducted environmental education activities with students compared with 63 percent of randomly-sampled teachers.

2. Over 77 percent of teachers used school grounds at least once for environmental education; over 70 percent of teachers conducted an environmental activity at least once off-school grounds.

3. Teachers take their students off-school grounds for 'field experiences', 'new educational stimuli', and 'hands-on laboratory' experiences.

4. More than 95 percent of teachers rated the quality of off-site environmental educational experiences as being 'good' or 'fair'.

5. K-12 school year visitor percentages for environmental education at six categories of facilities are: 1) Parks (22.2%); 2) Museums (20.8%); 3) Zoos (18.4%); 4) Day-Use Centers (15.7%); 5) Other Sites/Facilities (14.9%); and, 6) Overnight (Residential) Environmental Centers (7%).

6. Percent of school instruction hours for six categories of facilities are: 1) Overnight (Residential) Environmental Centers (26.1%); 2) Parks (20.9%); 3) Museums (15.4%); 4) Zoos (14.9%); 5) Day-Use Centers (13.8%); and, 6) Other Sites/Facilities (8.9%)

Teachers & Administrators: Responses on Finances, Environmental Eduction Places & Incentives

Support for Environmental Activities

1. The majority of teachers conducting environmental education did not receive financial support. The highest support category, 'off-site trips', received only a 21 percent response.

2. More than twice as many environmental educational contacts received funding, but positive response rates were still low (e.g., equipment - 10%, off-site trips - 39%).

Places for Environmental Education

3. 91 percent of environmental education contacts said they have a place to teach environmental education near school as compared to 77 percent of the randomly-sampled teachers.

4. Of those teachers with a place to teach environmental education, over 97 percent had a place within 30 miles of the school.

Willingness to Travel & Frequency Off-Site

5. 30 percent of teachers are willing to take their students further than 50 miles for a day experience; about 60 percent of teachers are willing to take their students more than 50 miles for an overnight experience.

6. 24 percent of teachers would not take students on an overnight trip.

7. 81 percent of teachers responded that they did not take their students off-site as often as they would like.

What Would Allow Students to Go Off-Site More Often?

8. The highest response categories for what would allow teachers to take students off-site more often for an environmental experience are: 1) Money for transportation (81% and 76%-teacher and

administrator responses respectively); 2) Money for fees (74% and 71% respectively); and, 3) Information about places to go (62% and 57% respectively).

9. For environmental education contacts, 'information about places to go' (46%) is less important than for randomly selected teachers (59%). However, the environmental education contacts believe the category 'other teachers being more supportive' is more important (18%) than do randomly selected teachers (13%).

10. 'Money for fees' and 'money for transportation' were most often listed as the most important items for teachers in enabling them to take students off-site for an environmental education experience.

11. 'Hands-on laboratory experiences', 'field experiences', and 'environmental specialist-guided tours' were listed most often by teachers as services that would prompt them to go off site for environmental education experiences more often.

Assistance to Conduct Environmental Education

12. A majority of teachers and administrators responded that 'funding and support' and 'training in environmental issues' are needed for teachers to conduct environmental education activities with students at school.

13. A minority of the oversample of environmental education contacts said they needed training in environmental issues (35.5%)

14. Both teacher and administrator respondents were almost evenly split on whether an environmental resource center or an environmental learning center is needed most to effectively teach environmental education to students.

Additional Administrator Responses

15. 77 percent of school administrators responded that there is no formal written plan for environmental

education in the school district. (Note: This may also be true for other state-mandated programs.

16. 95 percent of school administrators said that their school district does not have a separate budget line item for environmental education activities.

Section C - Facility Focus Groups

Background

1. Five focus groups of environmental education providers were conducted in the Spring of 1991. The focus groups' purpose was to develop more information about the history, roles, characteristics, and future plans of environmental learning facilities.

2. A citizen member technical Advisory Committee assisted the DNR in identifying, selecting, and recruiting participants for each of the five focus groups.

3. The views of focus group members represent various types of environmental education facilities; the reader should focus on the collective information from focus group participants.

Residential Environmental Education Centers or Environmental Learning Centers (ELC's)

Historical Development

1. Five major existing Minnesota residential environmental education centers had their beginnings in the 1960s and 1970s. Most were started by entrepreneurs with a strong commitment to environmental teaching.

2. Wolf Ridge Environmental Learning Center, established in 1971, first leased its facilities from the U.S. Forest Service. The Audubon Center of the Northwoods begun in 1968 is operated by the National Audubon Society. Mounds View North Center, established in 1977, is operated by the Mounds View school district. Long Lake Conservation Center,

established in 1963 first as a summer camp, was converted to a year-round and overnight facility in 1972. Deep Portage Conservation Reserve, the newest residential environmental education center in Minnesota, began with a land set aside from Cass County in 1973.

3. There are other residential environmental education centers in Minnesota including Wilder Forest Center in Stillwater and the Forest Resource Center in Lanesboro to name a few.

4. The main target audience of four of five major environmental education centers is elementary students from grades 4 to 6. The Audubon Center of the North Woods, in contrast, emphasizes college and adult education.

Roles

5. The primary role of residential environmental education centers is to serve school students; visits vary from a two-day to a week stay.

6. Long Lake Conservation Center, Wolf Ridge, and Deep Portage are accredited environmental education institutions through the North Central Association of Colleges and Schools. All five centers have collaborative agreements for credit transfers with colleges and universities.

7. Residential environmental education centers serve an important role in implementing and experimenting with multi-disciplinary environmental teaching. Residential centers play a catalyst role of integrating environmental education into the school systems.

Characteristics

8. Residential environmental education centers are primarily focused on environmental education and because of low attendance costs are accessible to many persons.

9. Center operations are supported primarily through private funds.

10. The geographic concentration of residential centers in northeastern and central parts of Minnesota limits accessibility by the population from the western and southern parts of the state.

11. Residential centers have not been able to meet all the demand for their services, due, in part, to a nine month school year.

12. Transportation logistics, low minority enrollment, and multiple teachers (by subject area) for secondary students are also problems facing residential centers.

Future

13. Residential environmental education centers foresee growing demand for their services. The operators recommend that existing centers be upgraded. Focus should then shift toward building new ones, perhaps in the southeastern and western areas of the state. A center is also needed in an urban area.

14. Residential environmental education center operators believe a minimum investment of $13 million in residential facilities will be needed in the next biennium.

15. Residential centers have begun to serve the elderly and business sector as well as forming international relationships.

Day Use Environmental Education Centers (Nature Centers)

Historical Development

1. Day-use environmental education centers had their origins in the 1960s supported by grass roots political and neighborhood support. Philanthropists, foundations, state bonds, and Land and Water Conservation (LAWCON) funds provided the means for land acquisition and facility development.

2. Minnesota has one of the highest densities of nature centers in the nation.

Roles

3. Nature centers have the goal of increasing the general public's awareness, understanding, enjoyment, and stewardship of the natural, cultural, and historical resources of their lands. By virtue of their location in heavily populated areas, nature centers are common places where people go to appreciate nature, relax, and recreate.

4. The largest group attending nature centers are elementary school students. Nature center staff work closely with schools and provide teachers with a natural site and environmental expertise.

5. Nature centers serve as information centers for environmental questions from the general public. Staff who operate nature centers may serve as environmental experts, land managers, or community consultants.

Characteristics

6. Nature centers are low cost, accessible facilities that offer a wide variety of programs. Low-cost and accessibility explain their high volume of visitors.

7. Operating costs are funded from user fees, private donations, and in the case of government facilities, from public funding.

8. Nature center programs must be continually upgraded to meet repeat user's interests.

9. Visits typically last for a day or less, but are considered to be a part of a life-long environmental learning experience.

10. Nature centers are concerned about over-use of their facilities causing environmental degradation.

Future

11. Nature centers expect to continue to be major vendors of environmental education and expect to serve more students from all grade levels through developing and negotiating additional service contracts with schools. Nature centers are also offering expanded programs for adults.

12. Nature centers are concerned about attracting secondary students to their facilities particularly due to cuts in transportation funds.

13. Issues surrounding the need for program certification and facility accreditation are a growing concern as nature centers' role in environmental education increases.

Private Camps

Historical Development

1. Private camps are some of the oldest facilities offering outdoor/environmental education. The first Minneapolis area scouting camps were started in 1910.

2. Historically, most private camps operated for the summer months only; in the 1970s private camps began to include environmental-specific programming as a part of their services. By the mid-1980s many camps were operating as year-round facilities, retreat, conference, and environmental education centers in addition to their role as summer youth facilities.

3. Week-day use among camps remains low; many camps are seeking to offer environmental curricula to schools as a means of generating extra income and using facilities during off-peak periods.

Roles

4. Camps continue to be major providers of summer youth camping experiences. Even so, some camps are now offering themselves as residential facilities to schools

and groups who desire a residential component to their environmental education programs.

Characteristics

5. Camps are located throughout the state and can target specific users groups and their unique needs.

6. Camps depend primarily on fees and gifts to operate. Accordingly, camps are under pressure to offer primarily programs that are self-sustaining.

7. Most camps do not offer environmental programs to schools, and those that are offered vary greatly from camp to camp. At present there are no standards for camp environmental education programs offered to schools.

Future

8. While camps will continue to serve their summer clients, camps increasingly are focusing on teaching environmental issues and broadening their client base (e.g., offering services to families and the elderly).

9. Camps see themselves as having tremendous potential to complement and augment the role played by residential environmental learning centers.

10. The future of environmental education at private camps will depend on the camps' ability to obtain necessary resources to operate quality self-sustaining programs.

Parks

Historical Development in Environmental Education

1. Local and regional parks began offering environmental programs as a result of the environmental movement of the 1960s and 1970s. For example, Lowry Nature Center in the Suburban Hennepin Regional Park

District, one of the first nature centers in the state, was established in 1969.

2. The first environmental education programs in state parks were initiated in the early 1960s with funding from the University of Minnesota and the Bell Museum. Today, state law mandates that the state park system provide environmental education; about $1.3 million of the state park budget is devoted to environmental education.

3. Since Yellowstone Park's opening in 1916, the National Park Service has offered nature guides to assist visitors with appreciating and interpreting parks' natural resources. Environmental education did not become a focus for the National Park Service until the early 1970s.

Roles

4. Parks at all four levels -- local, regional, state, and national -- provide the public with opportunities for recreation, social leisure, and environmental education.

5. Parks are moving toward more formal environmental education programing.

6. Parks have a hierarchy that drives their programs; local parks tend to have broad programing; national parks tend to have more focused programing.

7. Local parks work to provide opportunities for development of social and life skills as well as environmental skills and are often considered the neighborhood sports ground.

8. Regional parks tend to provide opportunities for self-directed recreation in outdoor settings. Regional parks also may have strong teaching connections with schools.

9. State parks play a role in teaching residents about Minnesota's natural and cultural history.

10. National parks protect outstanding natural, historical, and cultural features, and have tended to emphasize interpretation rather than education.

Park Characteristics

11. National parks stand out for their unique geographic, geologic, historical, and cultural features. Visitors stays vary from a day to even weeks or months.

12. State parks have high quality natural, historic, cultural, and recreational features. Visitors come for a day, or extend the experience to days or even weeks.

13. Local and regional parks have high accessibility because they are located near or within population centers. These parks tend to have high repeat usage and serve a diverse clientele.

Future

14. Parks plan to play a major role in environmental education. Challenges managers face include: a) finding effective ways to work with larger numbers of people as demand for environmental education increases; b) reinforcing environmental awareness into individual

lifestyles; and, c) making environmental education relevant to minorities and other under-served populations.

Zoos, Museums & Special Emphasis Facilities

Historical Development

1. Museums have existed for centuries. Museums also have a long history in Minnesota. The Science Museum of Minnesota was conceived in 1907; the Bell Museum was created by legislative mandate in 1885. Both evolved to offer environmental and natural resource educational opportunities.

2. Zoos are also hundreds of years old. Emphasis in recent years has shifted from recreational and

educational roles to conservation and research activities especially in large zoos. There are three major zoos in Minnesota, The Lake Superior Zoological Gardens, the Como Zoo and The Minnesota Zoo.

3. There are thousands of speciality facilities across the nation that offer environmental education. In Minnesota special emphasis facilities include the Raptor Center, and the Wildlife Rehabilitation Center.

Environmental Education Roles

4. Zoos, museums, and speciality facilities play a strong role in environmental education. For example, over 800,000 people visit the Science Museum of Minnesota each year; in addition, the Science Museum of Minnesota's outreach programs reach nearly 130,000 students and teachers annually. The Minnesota Zoo receives over one million visitors annually; its environmental education programs reach 107,000 students with its on-site programs, and almost 55,000 students with its off-site presentations.

Characteristics

5. Zoos, museums, and specialty facilities share common themes. All rely on education to carry out their mission. All engage in research. Their target clientele includes both the public and school students.

6. Learning experiences at zoos and museums tend to be short and thus not intensive. These facilities seek to raise their audiences' awareness and curiosity rather than provide an in-depth understanding of issues and topics.

7. Zoos and museums are experimenting with new interpretive methods and are increasingly working with the media to deliver environmental education.

8. Zoos and museums face a difficulty of having to continually change and offer new exhibits to attract and bring back visitors. They also face space problems. For example, the Science Museum of Minnesota has limited exhibit space; the Minnesota Zoo does not have

student housing which severely limits the ability of outstate students to partake in zoo environmental education programs.

9. Museums and zoos have an advantage over many other types of facilities -- their capacity to reach and attract large volumes of people.

Future

10. Zoos, museums, and special emphasis facilities have the capacity to help teachers; these facilities recognize the need to share information, resources and cooperate with each other.

11. Zoos, museums, and special emphasis facilities want to expand the definition of their exhibits to get visitors involved. They believe they need to develop post-visit opportunities to reinforce and sustain environmental education messages.

12. Programs will be expanded to serve school students in higher grade levels and the growing, aging population as well as private travel groups.

Section D - Environmental Education Center Inventory Data

Background & Inventory Rationale

1. The inventory census was developed with the assistance of a thirty member technical advisory committee. Survey questions were designed to obtain information including: 1) Facility location and size; 2) Mission;

   3) Educational emphasis; 4) Staffing; 5) Capitol costs; 6) Fees & clientele; and, 7) Curriculum focus.

2. Inventory data are not compiled using a statistical analysis package. The design of the survey precluded this option.

3. The survey was sent to over 250 facilities; almost 180 existing or proposed facilities/projects responded.

Use of the Data

1. Comparison among different types of facilities is difficult; in addition, it is not known whether all facilities which offer environmental education are included in the inventory.

2. To facilitate comparison among facilities, data are placed in categories where appropriate.

What the Inventory Tells Us

1. The inventory provides a rich descriptive base of information on: 1) Residential Centers; 2) Day-Use Nature Centers; 3) Parks (state, regional, and local); 4) Federal facilities; 5) Museums, zoos, and special emphasis facilities; and, 6) Proposed facilities and projects.

2. The data should be interpreted to represent categories of facilities rather than to be inclusive about each specific facility providing environmental education in Minnesota. Many facility personnel who responded to the inventory, asked that their data remain confidential; accordingly, much of the data is discussed in a generic manner.

3. Environmental education occurs in many places across Minnesota. Neither schools, day-use centers, parks, museums, zoos, nor residential facilities play a sole or majority role in educating students--though the role of each is significant and integral to high quality environmental education of Minnesota's students and adults alike.

Residential Environmental Education Centers

1. For the purposes of discussion and data comparison, residential centers are divided into four categories: 1)

Centers which emphasize environmental education as a primary mission; 2) Centers which emphasize environmental education in addition to other activities; 3) Camps; and, 4) Other residential facilities.

2. Proposed or newly established facilities such as Kettle River ELC and the Forest Resource Center in Lanesboro, are discussed.

RESIDENTIAL CENTERS WITH ENVIRONMENTAL EDUCATION AS A PRIMARY MISSION

Types of Facilities & Mission

1. Five primary facilities are discussed: 1) Deep Portage Conservation Reserve; 2) Wolf Ridge Environmental Learning Center; 3) Mounds View North Environmental Learning Center; 4) Audubon Center of the North Woods; and, 5) Long Lake Conservation Center.

2. 'Environmental education' according to the 1990 Minnesota Environmental Education Act is a significant goal of these facilities. Percentages of time and effort for each facility devoted to environmental education range from 95 to 100 percent.

3. Educational emphasis focuses on environmental education, recreation, and social activities.

Operating Times, Budgets, & Fees

4. Most residential facilities are open on a year-round basis; all have plans for further development.

5. Most FTE positions are for teaching activities; less staff is devoted to curriculum development.

6. Operating budgets range from $145,000 to $1,250,000--most of which is devoted to environmental education.

7. Fees and facilities vary among the centers. All responded that their largest visitor groups exceeded center physical capacity.

Habitats & Equipment Available

8. Wetland and forest habitats are available at all six facilities. Only one of the five respondents has prairie or orchard habitat available.

9. Each residential center offers a wide variety of equipment for student use.

Clientele

10. The annual number of visitors ranges from 3,400 to 13,500 people. Most visitors are state residents and participate in environmental education programs or services offered by the facility.

11. All facilities had to turn away students due to scheduling conflicts or booked facilities.

12. Three of the five facilities responded that between 85 and 100 percent of their visitors traveled 100 miles or more.

Effectiveness of Program & Instruction

13. The primary means of ensuring that the state educational needs are met include: 1) Formal review and accreditation; 2) Informal peer consultation & review; and, 3) Staff review or self-examination.

14. Residential centers monitor their programs primarily through teacher evaluations, client feedback, and repeat visits.

15. Data on environmental topics offered as a part of these centers' curriculum are not compiled. Because the percentages of time and effort devoted to environmental education vary considerably among facilities, comparisons among curriculum offerings would not be useful. (These data are not compiled for other environmental education centers discussed responding to the inventory survey as well.)

Residential Centers with Environmental Education in Addition to Other Activities

Types of Facilities & Mission

1. Centers in this category include: 1) Vineland Center; 2) Wilder Forest; 3) Northwoods Resource Center; 4) Confidence Learning Center; 5) Lake Carlos Environmental Learning Center at Luther Crest; 5) Green Lake Bible Camp; 7) Camp Courage; 8) Camp Ojiketa & Camp Cheewin; and, (9) Wilderness Canoe Base.

2. The diversity of missions for these facilities demonstrate that environmental education occurs at a wide variety of facilities, many of which are difficult to categorize. Responses concerning the amount of time devoted to environmental education vary from 5 to 100 percent. Educational emphasis includes environmental education, recreation, and social activities. Three centers offer religious training.

Operating Times, Budgets, & Fees

3. Centers are open from 210 to 365 days. All nine facilities are operational and have plans for further development.

4. Budgets vary from $216,000 to $1,500,000. Percentage of the budget devoted to environmental education varies from 5 percent to 90 percent depending on the facility.

5. Fees as well as physical plant vary greatly among centers.

Habitats & Equipment Available

6. Majority offer wetland, forest, and lakes/rivers/streams habitat. Two offer prairies or croplands/orchards.

7. The facilities offer a wide variety of equipment for student use although none offer computers.

Clientele

8. The number of visitors to these residential centers ranges from 500 to just over 25,000. Seven of the nine centers responded that 100 percent of their visitors participated in environmental education programs or used center services.

9. Six of the nine centers had to turn away visitors due to scheduling conflicts, filled facilities, or visitor group interests not meeting mission requirements.

10. Length of stay varies from a day to two months with a majority of stays ranging between one day and one week. Distance traveled by visitors varies considerably from facility to facility.

Effectiveness of Program & Instruction

11. These residential centers ensure that the environmental educational needs of the state's educational system are met primarily by staff review or self-examination, teacher evaluation, and informal peer consultation and review.

12. Programs are monitored primarily through client feedback, repeat visits, and teacher evaluations.

CAMPS

Types of Facilities & Mission

1. Of 47 camps which responded to the inventory, 20 are religiously affiliated and 27 are not.

2. 64 percent of the respondents said that environmental education is a significant objective according to the 1990 Environmental Education Act. The percentage of time devoted to environmental education varies from zero to 100 percent.

3. A overwhelming majority of respondents listed environmental education as an emphasis for their

facility. Religious training, social, and recreational topics also were strong components of camp activity as well.

Operating Times, Budgets, & Fees

4. Approximately half the camps are open only during the three primary summer months (June, July, August). Others are open for longer periods of time ranging from a longer summer period to year-round.

5. Fee schedules vary considerably among camps.

6. 33 of the respondents said their facility offers classrooms; 40 offer food service facilities; and 40 offer indoor lodging.

Habitats & Equipment Available

7. Most camps offer wetland, forest, and lakes/rivers/stream habitats for student use. Camps also offer a variety of equipment for student use.

Clientele

8. Visitor use at camps ranges from 80 to 11,200 per year. 32% of the camps said that their visitors participated in environmental education programs or used center services; 26 percent of the camps responded that visitors used only grounds and not programming services.

9. Only about a third of the camps said they turned away prospective students or other visitors. Primary reasons include lack of space and scheduling conflicts.

10. Most visitors to camps are from Minnesota, although some camps had many non-resident visitors. Distance traveled to camps vary greatly.

Effectiveness of Program & Instruction

11. Camps ensure that the state educational system needs are met primarily through staff review or self-examination and teacher evaluation.

12. Camps monitor the effectiveness of their programs primarily through client feedback and repeat visits.

OTHER RESIDENTIAL FACILITIES

Facilities which do not easily fit into the other residential center categories discussed above include: 1) National Forest Lodge (Cook County); 2) Foley Environmental Education Center (Crow Wing County); and, 3) Young Life Castaway Club (Ottertail County). The survey responses for each of these facilities are briefly described.

Day-Use Nature Centers

Types of Facilities & Mission

1. There are thirty-one facilities in this response category. All said that environmental education is a significant objective of their facility based on the 1990 Minnesota Environmental Education Act.

2. Percentage of time devoted to environmental education varies from 10 to 100 percent.

Operating Times, Budgets, & Fees

3. Almost all day-use centers are open on a year-round basis. Fees range from 'no charge' to several hundred dollars for equipment and building rentals.

4. 28 of 31 facilities have classrooms available.

Habitats & Equipment Available

5. Nature centers offer wetland, forest, prairie, cropland/orchard, and lakes/rivers/streams habitats to name a few.

6. Nature centers offer a wide variety of equipment for student use.

Clientele

7. The number of visitors at these facilities ranges from 125 to 125,000.

8. 71 percent of the respondents said that visitors participated in environmental education programs and used center services.

9. 71 percent of the respondents said they had to turn away prospective students or visitors because of lack of space, staff, or sufficient days to schedule all groups.

10. Most of the clientele served by day-use centers are students, most of whom are from Minnesota. Respondents indicated that more than ninety percent of visitors to day-use centers travel no more than 50 miles to visit the facilities.

Effectiveness of Program & Instruction

11. The primary means of ensuring that state educational needs are met include staff review or self-examination, and teacher evaluations.

12. The primary means of monitoring and evaluating program effectiveness are client feedback and repeat visits.

Parks (state, regional, local)

Minnesota State Parks

1. The Minnesota Department of Natural Resources operates 66 state parks. There is a state park within 40 miles of every Minnesota citizen. $1.3 million of the state park budget is devoted to environmental education.

2. State Park facilities promote environmental education, recreational and social activities.

3. State parks offer a variety of habitats for student learning including wetlands, forests, prairies, fields, and lakes/rivers/streams.

4. State parks offer equipment for student learning although to a lesser degree than residential or day-use environmental learning centers.

5. During 1990 over 7.9 million people visited state parks. State park interpretive centers hosted over 590,000 visitors; 232,000 of them attended interpretive programs by request.

6. Most state park visitors are day users and most (80%) are state residents.

7. A majority of state parks turned away visitors primarily for lack of interpretive staff to provide services. Other reasons include lack of facilities, facilities operating at full capacity, or facilities closed for certain days of the year.

8. The primary method state parks use to ensure that the state's educational system's needs are met is through staff review or self-examination. Informal peer consultation/review and joint program development and implementation are used as well.

9. State parks monitor program effectiveness primarily through client feedback, repeat visits, and peer review.

Metropolitan Parks

10. The Metropolitan Council oversees regional park implementing agencies including Ramsey, Hennepin, Anoka, Washington, Carver, Scott, and Dakota counties as well as the cities of Bloomington, Minneapolis, and St. Paul. Baylor Regional Park in Young America, Minnesota is also within Metropolitan Council oversight. Environmental education, however, is the specific responsibility of each park provider.

11. Each of the park systems offers various types of environmental education services.

Federal Government

1. The U.S. Fish & Wildlife Service offers environmental education programs at the Minnesota Valley National Wildlife Interpretive Center in St. Paul. USF&WS refuges also provide environmental education sites.

2. The Army Corps of Engineers operates environmental education programs from its recreational sites. Efforts include campground talks, interpretive bulletin boards and a junior ranger program.

3. The U.S. Forest Service carries out environmental education through its Resort Naturalist Program, forest campgrounds, and visitor contact at permit stations located at Ranger District Offices.

4. The National Park Service offers environmental education efforts at three primary Minnesota locations: 1) Voyageurs National Park, 2) Grand Portage National Monument; and, 3) Pipestone National Monument.

Museums, Zoos, and Special Emphasis Facilities

<u>Zoos</u>

1. There are three large zoos in Minnesota: 1) The Minnesota Zoo in Apple Valley; 2) The Lake Superior Zoological Gardens in Duluth; and, 3) The Como Zoo in St. Paul.

2. The percentage of time devoted to environmental education for the three zoos varies from 15 to 60 percent.

3. Educational emphasis for the three zoos centers on conservation eduction, environmental & scientific education, ecology, botany/zoology, and recreation.

4. The Minnesota Zoo has severe shortages of classroom space; lack of residential facilities for outstate students

limits the zoo's ability to increase attendance at its environmental education programs.

5. All three zoos are open year-round and have plans for further development.

6. Zoos offer a variety of habitats including wetlands, forest, prairie, and lakes/rivers/streams. The Minnesota Zoo and the Como Zoo each estimate they have about a million visitors annually. The Lake Superior Zoological Gardens estimates it has about 130,000 visitors annually.

7. The Minnesota Zoo offers formal curriculum review and accreditation as well as staff and teacher evaluations to ensure its environmental education programs match the needs of the state's formal educational system.

8. There are smaller zoos in Minnesota as well. One of them, Oxbow Park & Zollman Zoo operated by Olmstead County is briefly described.

Museums

9. Nine of eleven museums responding to the survey consider environmental education as a significant objective given the goals of the 1990 Environmental Education Act or have a part of their budget devoted to environmental education.

10. Educational emphasis among all respondents primarily concerns historical/cultural activities followed by conservation/resource management, and nature study.

11. Five of the nine museums are fully operational with plans for further development. Fees vary from 'no charge' to fees covering group programs and traveling exhibits.

12. Museums have available a wide variety of habitats for instruction including forests, croplands, lakes/rivers/streams, and prairie. One also has farm habitat available.

13. Five of nine museums reported that visitors participated in environmental education programs and used museum services.

14. Only the Science Museum of Minnesota reported that insufficient space has resulted in visitors being turned away.

15. Museums offered a variety of responses as to how their programs meets the needs of the state's formal education system. The Science Museum of Minnesota has the most comprehensive process for evaluating how its programs meet the needs of the state's educational system.

16. Museums monitor program effectiveness primarily through client feedback, and repeat visits. The Science Museum of Minnesota also conducts scientific surveys of clients.

Other Special Emphasis Facilities

17. There are other facilities in Minnesota which provide environmental education services to students and the public which do not fit easily into the major facility categories.

18. Short descriptive narratives are provided for the following facilities:

    a) Cloquet Forestry Center, U of M

    b) The Raptor Center, U of M

    c) Mineland Reclamation Offices, Chisholm, MN

    d) Lake Superior Center, Duluth, MN

    e) International Wolf Center, Ely, MN

    f) Moorhead State University Science Center

    g) Lake Itasca Forestry & Biological Station

    h) Red River Valley Natural History Area

i) Minnesota Landscape Arboretum

j) Kaplan's Woods Parkway

k) Miscellaneous Providers that Do Not Operate Out Of A Facility Or On a Dedicated Tract of Land

1) E.F. Waite Neighborhood House
2) Central Minnesota Water Quality Project

Proposed Facilities & Projects

1. There are several types of proposed environmental learning facilities or projects. Several are already partially operational.

2. Proposed projects include:

a) Lawndale Environmental Foundation

b) Heron Lake Environmental Learning Center, Inc.

c) Kettle River Environmental Education Center, Sandstone, Minnesota

d) Forest Resource Center, Lanesboro, Minnesota

e) Upper Mississippi River Refuge Environmental Learning Center

f) Hartley Nature Center, City of Duluth

g) Sand Prairie Wildlife Management Area

h) Joseph H. Wargo Nature Center, Anoka County

i) Monticello Environmental Research Station

j) Elementary School Nature Areas, Southeastern Minnesota

k) Prairie Woods Environmental Learning Center, Kandiyohi County

l) Agassiz Environmental Learning Center, Fertile, MN

m) Prairie Wetland Learning Center, Otter Tail County

Section E - Private Foundation Funding

Background

1. The purpose of the overview is to give readers an understanding of the role foundations have played in supporting environmental education efforts, and to depict how foundations may play a future role with respect to environmental education centers.

2. The information is based on informal discussions with personnel of the Minnesota Council on Foundations, personnel from private foundations, and environmental education providers.

Historical Support

1. Foundations have contributed to the development of residential centers including Wolf Ridge, Long Lake Conservation Center, and Deep Portage Conservation Reserve. Private foundations have also supported day-use centers including Dodge, Lowry and Eastman Nature Centers.

2. Foundations generally are not interested in supporting development of new facilities.

Program Support

1. Foundations are currently receiving requests for environmental education programs (e.g., curriculum development). Many foundations do not consider environmental education initiatives to be a priority but will continue to accept and consider requests for environmentally-related program funding in the future. Other foundations such as McKnight and

Blandin include environmental education as a priority topic for funding.

2. There is still interest in parts of the philanthropic community and private individuals to support development of residential facilities (e.g., the Forest Resource Center in Lanesboro).

Future of Foundation Support

1. Decreased support or interest in environmental education among some foundations may in part be due to the shift of public programs to the private sector and a decrease in foundation revenues due to the recent slowdown in the economy.

2. It appears that program funding requests will be more successful than capital development or improvement requests; in either case, competition for funds will be intense.

III. Supporting Information

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PART III

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Discussion of Data Gathering Process

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Discussion of Data Gathering Process

I. Introduction

The 1990 Legislature mandated that the Minnesota Department of Natural Resources develop a long-range plan for the development and coordination of environmental learning centers statewide. The same legislative session produced comprehensive revisions to the state's mandates related to environmental education. The Legislature passed the Environmental Education Act of 1990 which established the Office of Environmental Education.

The Act also authorized development of a comprehensive plan and strategy for life-long learning for Minnesotans to achive seven environmental education goals. The statewide environmental education plan, to be developed by the Office of Environmental Education, will integrate the strategies, policies and plans of the Department of Education and secondary institutions with non-formal educational providers

II. Common Data Gathering

In response to its legislative mandate to conduct a study of residential environmental learning centers and nature centers, the Department of Natural Resources submitted a $153,000 request to the Legislative Commission on Minnesota Resources (LCMR). At the same time the LCMR received many requests to fund environmental education initiatives. Requests were submitted to fund construction of new education centers, develop new educational programs, deliver existing programs, and to support Office of Environmental Education initiatives, to name a few.

The requests exceeded available monies and were difficult to evaluate because of their scope and breadth. The LCMR was also interested in coordinating the DNR study of environmental learning centers with the state-wide environmental education planning effort, a study of environmental education programming and several other LCMR-sponsored environmental education initiatives as well. Consequently, it was agreed that there would be common development of data for the various environmental education planning efforts.

The development of common data began in the Spring of 1991 with the design and implementation of the teacher, administrator, and resident surveys. A thirty member technical advisory committee oversaw that effort. The survey data were delivered to the Office of Environmental Education in August of 1991.

III. Information Sources

The Department of Natural Resources needed additional sources of data to complete its study. The Department developed a study design as well as survey designs with the assistance of a thirty member technical advisory committee. Technical committee members included representatives from day-use and residential environmental education centers as well as affected state agencies.

During the study's early design stages, the need to learn more about Minnesota's environmental education providers became apparent. As this study data depict, there is much diversity as to the size and types of providers. Neither the Department nor technical advisory members were aware of comprehensive listings or studies of environmental education providers in Minnesota prior to this effort.

As a result, the study's research design was exploratory and flexible in nature. The Department was unsure what it would receive for data results and treated the entire data development process as an inquiry to assess issues surrounding environmental education facilities.

Four primary sources of information have been used:

1) *Minnesota Center for Survey Research Data*

   These surveys of teachers, administrators and residents were cooperatively designed by a thirty member technical advisory committee. The data will be used in the Office of Environmental Education's state-wide planning effort in addition to its use in this study.

2) Environmental Education Center Facility Focus Groups

More information was needed about the history of facilities providing environmental education services and their current activities as well as future plans.

One of the best means to obtain this type of descriptive information is through focus groups composed of the individuals who operate these facilities. The Department conducted focus groups of five major categories of facilities: 1) Residential environmental education centers; 2) Day-use environmental education centers; 3) Private camps; 4) Parks; and, 5) Zoos, museums, and special emphasis facilities.

3) Inventory Survey

The Department conducted an inventory of environmental education centers across the state. An inventory survey was sent to over 250 facilities across the state. Providers responding to the inventory include residential centers, camps, zoos, museums, day-use centers, parks, specialty facilities, and government operations.

4) Review of Private Foundation Funding Sources

The Department reviewed the role foundations play in funding environmental education initiatives. The purpose of this review was to determine the extent additional sources of funding can be obtained from foundations for environmental education facilities.

IV. The Diversity of Data Results

The diversity of responses, particularly to the inventory survey, was unexpected. On almost every question response percentages vary from zero to 100 percent. One of the most notable results of the inventory is its depiction of the wide range of environmental education centers in Minnesota.

For example, environmental education is the primary mission of some facilities, for others it is the means to achieve a different mission varying from rehabilitation to youth development. The inventory data do not easily fall into discrete categories; in contrast, the data support the view that environmental education takes place in a wide variety of facilities. There even is much diversity among residential and day-use centers--different historical development, clientele, programs, size, operating fees, and of course, facility locations.

As for proposed facilities, data indicate that much of their support stems from local grass roots activism. Factors such as local community support must be taken into consideration when considering new initiatives. A point on a map as a suggested facility site due to geographic or economic preferences may pale in significance compared to community activism and involvement.

The data, however, provide information about habitat types that current environmental education activities may not fully address (e.g., prairies). Data indicate that there are a variety of facility types available to conduct environmental education and that those types are not always in competition with each other.

The data also point out differences between facilities, depict the concerns of residents, teachers, and administrators, as well as provide information on gaps in environmental education services. This is the type of information that the study process developed. The text below provides several options to consider when reviewing the data.

V. Use of Data for Future Planning

When reviewing the data it is recommended that the reader look for:

1) Niches occupied by various types of facilities;

2) Gaps or weakness in educational services that are not being provided by facilities;

3) Barriers to environmental education and environmental education facility use;

4) Opportunities to involve local communities, school districts, and residents;

5) Opportunities for cooperation among facilities, teachers, and the user; and,

6) Opportunities for funding which allow minimum investment to achieve maximum results.

Environmental Education Center Committee members used the criteria outlined above as well as their own expertise to develop the study's recommendations.

Section B

Analysis of Surveys of Environmental Education in Minnesota: Residents, Teachers and Administrators

Analysis of Surveys of Environmental Education in Minnesota: Residents, Teachers and Administrators

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Appendix - Sample MCSR Surveys

Analysis of Surveys of Environmental Education in Minnesota: Residents, Teachers, and Administrators

I. Introduction

Mail surveys of environmental education in Minnesota were conducted in the Spring of 1991 by the University of Minnesota Center for Survey Research (MCSR). Surveys were designed to provide information for several Legislative Commission on Minnesota Resources (LCMR) environmental education projects including: 1) The Environmental Learning Center Study (this report); 2) Development of the state-wide environmental education plan; and, 3) A study of environmental learning center curricula.

Survey Goals & Design

The goals of this survey were to identify specific environmental education programming and facility needs, as well as to gauge the demand for environmental instruction in an informal (i.e., non-school) setting.

Questions included as a part of the survey were specified by a thirty-member Environmental Education Advisory Committee representing the public, teachers, environmental education facility operators, and agency staff. A ten member project steering committee oversaw the survey development process.

Survey design began in January 1991. Two teacher focus groups (metro and outstate) were held in February 1991 to give technical advisory committee members and MCSR staff more information on how to define teacher and administrator questions. The Technical Advisory Committee revised the survey during its February 23, and April 4, 1991 meetings. Surveys were mailed in the Spring of 1991. The Minnesota Center for Survey Research (MCSR) received responses, tabulated them, and wrote the technical survey report during June, July, and August 1991. The analysis in this section of the Environmental Learning Center Study is based on data contained in that technical report.

Minnesota residents answered questions about: 1) Their concepts of environment; 2) Their sources of information about the environment; 3) The types of environmental learning sites they

have visited and what they did at each; 4) Whether they would be willing to pay an additional tax each year to improve environmental education; and, 5) How important it is to include environmental concepts in traditional school subject areas.

Minnesota teachers and school administrators answered questions about: 1) Their concept of the environment and environmental education; 2) Their sources of information about the environment; 3) Current teaching practices in environmental education; 4) Sources of environmental education curricula; 5) How important it is to include environmental concepts in traditional school subject areas; 6) Sources of funding for environmental education field trips; and, 7) Their needs to teach environmental education more effectively in the future.

Sampling Design & Survey Returns

The Technical Advisory Committee identified the public at-large (adult Minnesota residents), school teachers, and school administrators collectively to be the most knowledgeable about current environmental education practices and the current demand for informal environmental instruction. Mail surveys were sent to three populations: 1) 2,400 Minnesota residents; 1,816 Minnesota K-12 teachers; and, 3) 800 Minnesota school administrators. The 1,816 teachers surveyed include an oversample of 216 environmental education contacts from a list maintained by the Department of Education. The purpose for this oversample is discussed below.

Questionnaires were completed and returned by 1,424 Minnesota residents, 1,214 Minnesota teachers and 556 Minnesota school administrators. The overall response rates were 66 percent for residents, 73 percent for teachers and 72 percent for school administrators. For this type of mail survey the response rates for each population surveyed are considered to be excellent.

II. General Comments on Tabulation Results

Use of Environmental Education Contacts Oversample

The survey includes an oversample of teachers who are environmental education contacts to determine differences

between a random sample of teachers and those with specific environmental education skills.

The analysis and discussion on the following pages is based primarily on responses from all teachers including the oversample. Unless stated otherwise, 'teachers' refers to the composite population of randomly selected teachers and the environmental education contacts oversample. For the most part, responses from contacts did not vary greatly from the responses of the random sample of teachers. Accordingly, differences between the oversample and random teacher sample are discussed only where they appear important.

Minnesota Residents / Teachers / Administrators

Minnesota residents, teachers, and administrators were surveyed separately. For the purposes of data analysis, the discussion includes responses from the three populations surveyed where such a comparison is meaningful. That is, the discussion combines the results of the three surveys into one analysis. For example, the discussion on how informed respondents are on environmental issues covers all three populations surveyed. This method of depicting the data facilitates the reader's understanding on how the data compare between Minnesota residents, teachers and administrators.

Use of the Surveys: Environmental Learning Center Study

The analysis of the three surveys in this report is focused on the data which pertain primarily to environmental learning centers. Therefore, data which concern environmental education more generally or which pertain primarily to classroom instruction are not discussed in this report. Other parties working on LCMR-funded environmental education projects are expected to use those data for their projects.

III. Analysis of Survey Results: Residents with Comparisons to Teachers & Administrators

Minnesota Residents Views on What is an Environmental Issue

Minnesota residents were given a list of twelve subjects and asked which of them relate to the environment. Not surprisingly, 90 percent or more of the respondents listed the following as environmental-related topics:

Pollution	99%
Water quality	99%
Solid waste disposal	98%
Farming methods	92%
Use of fossil fuels	90%

Other environmentally related topics did not receive as high a response:

Global warming theories	89%
Variety of plants/animals	85%
Population growth trends	74%
Urban growth trends	69%

The data suggest that a majority of Minnesota residents have traditional views on what they believe are environmentally-related topics. The lower response percentages for the four subjects just listed suggest that the residents may not fully understand the more complex issues or their linkage to more commonly understood environmental concerns.

For example, population growth is considered by many to be the primary environmental issue driving all others such as pollution, water quality, etc. Yet, this category received one of the lowest response rates from topics generally considered to be environmentally-related in nature.

Respondents indicated that the subjects of 'AIDS', 'planets in the solar system', and 'economic growth forecasts', are the least environmentally-related (18%, 34%, 38% respectively).

How Informed Respondents Are About Environmental Issues

Minnesota residents, teachers, and administrators were each asked how informed they are on environmental issues. The data in Table One below suggest that residents, teachers, and administrators believe they have knowledge on environmental issues:

Table 1

HOW WELL INFORMED ARE YOU ABOUT THE ENVIRONMENT?

	Very Informed	Somewhat Informed	Combined Percentage
Minnesota Residents	11%	74%	85%
Teachers	31%	64%	95%
Administrators	27%	70%	97%

Affirmative responses as to how much interest the public, teachers, and the administrators have with respect to environmental issues are also high as indicated in Table 2 below:

Table 2

HOW INTERESTED ARE YOU IN ENVIRONMENTAL ISSUES?

	Very Interested	Somewhat Interested	Combined Percentage
Minnesota Residents	46%	49%	95%
Teachers	71%	28%	99%
Administrators	68%	31%	99%

Over two thirds of the teachers and administrators indicated a strong interest in environmental issues as opposed to less than

one half of the residents sampled. Almost 100 percent of the teachers and administrators had at least 'somewhat interest' in environmental issues. The data suggest that teachers and administrators-those responsible for educating students about environmental issues-view environmental issues as being very important.

Interest & How Informed: Randomly Selected Teachers & Environmental Education Contacts

Breaking out the teacher population into randomly selected teachers and the environmental education contacts oversample reveals slightly different results. Not surprisingly, environmental education specialists were more likely to be 'very informed' in environmental issues (48%) than were the random sample of teachers (28%). Similarly, more environmental education contacts were likely to indicate they are 'very interested' in environmental issues (83%) than were teachers (69%). Both, however, indicated they were better informed and more interested than the general population.

Information Sources

Survey respondents were asked where they might get information on environmental problems or issues. Responses to this question help to understand what sources people use to obtain knowledge about environmental issues. Twenty-two response categories were offered:

* Your state and local government
* The federal government
* TV news
* TV news magazine shows
* Radio
* Newspapers
* Magazines
* Local schools
* Environmental groups
* Local civic groups
* Large corporation
* The business in your community
* Friends & other people

*Your children
[1]Educational Cooperative Service Units
Science or natural history museum
Zoos
National or state parks
Overnight environmental centers
A nature center not located in a state or national park
Other local parks
Other (specify)

*Roper Poll Category, "The Environment: Public Attitudes and Individual Behavior/", July, 1990

[1]This category was not offered to the general population survey group

Importance of Media Sources

More than 98 percent of residents, teachers, and administrators indicated that newspapers were a 'major' or 'minor' source of environmental information making this the most popular source among all populations surveyed. Over 90% of administrators, teachers, and residents responded that the following types of media were a source of information about environmental problems and issues: TV news, TV news magazine shows, radio, newspapers, and magazines.

Importance of Government Sources

The only other 'major' or 'minor' source which received a better than 90 percent response rate from all three categories of respondents was 'state and local governments'. The federal government also was a common source; 86 percent of residents indicated they received environmental information from the federal government; more than 90 percent of teachers and administrators also responded that they received information from the federal government as well.

Sources Not Used as Often

With the exception of the 'other' category, the two sources least checked by resident, teacher, and administrator survey

respondents include 'large corporations' and 'businesses in your community'. Similarly, survey respondents indicated that their use of 'overnight environmental centers', 'nature centers not located within parks', and 'other local parks' was less than most other source categories offered.

Source Differences Among Survey Populations

Minnesota residents indicate that they use environmental information sources outside government and the media less than teachers or administrators. These latter two groups tended to use the business community, parks, nature centers, and overnight learning centers more often as well. Not surprisingly, teachers and administrators received information about the environment from local schools more often than residents. Administrators and teachers also indicated they use environmental learning centers more often as a major or minor source of environmental information than the general population. This is not surprizing since a large part of the work of environmental learning centers focuses on education of school-age children which includes teacher involvement.

It appears that some of the differences among source use can be explained by ease of access. The media (radio, newspapers, and TV), for example, are easily accessible to all adults as is information from state and local governments and environmental groups. In contrast, nature centers, local parks, businesses, overnight environmental centers, and schools, may not be as accessible to many adults whose time is primarily spent at a work site.

While it is true many of these facilities are available on weekends or evenings, the availability of media sources is more extensive and media sources do not appear to compete as directly for a respondent's time (e.g., a respondent can listen to a 30 minute news program while at home; a visit to a learning center may take several hours to a day precluding other major activities).

Source Differences Among Randomly Selected Teachers & Environmental Education Contacts

Considering 'major' and 'minor' source categories together, randomly selected teachers and environmental education contacts gave similar responses. Environmental education specialists, however indicated that they use the media (T.V. News, Newspapers, News Magazine Shows, and the Radio) as a major source less than the randomly selected teachers but more often as a minor source. Environmental education specialists also indicated they use 'civic groups' and 'businesses in the community' as major or minor sources less often than randomly selected teachers.

Comparison to the July 1990 Roper Survey

In July 1990 the Roper organization conducted a national survey on public attitudes and behavior concerning the environment. The survey included fourteen of the twenty-two source categories in the MCSR survey. The results of the Roper survey closely parallel the results of the MCSR survey with respect to sources of environmental information.

Based on the Roper survey results, on a national basis it appears that most of the public's major and minor sources of environmental information are the media and government. Note: A higher percentage of Minnesota respondents consider the fourteen Roper poll source categories as major or minor sources than does the national public. These data suggest that Minnesota residents are more interested in environmental issues than the national population.

Where to Get More Environmental Information If Needed

Minnesota resident respondents were also asked which of the twenty-two sources would they use if they needed more environmental information.

The data suggest that the public generally would turn to the same sources of information they normally would use to obtain environmental information. For example, newspapers, magazines, and state & local governments were most often

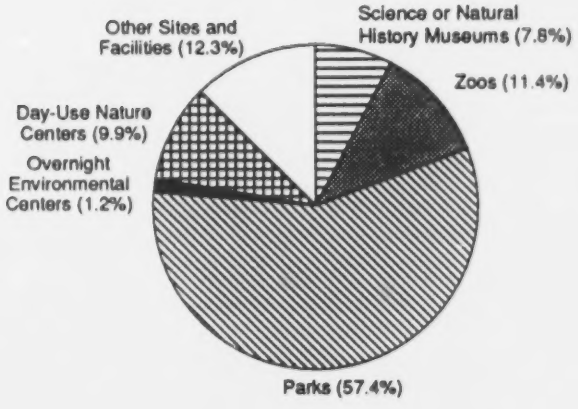
checked as 'likely' or 'somewhat likely' sources for more information. Newspapers, magazines, and state & local governments also received high response percentages for where members of the public obtain their information.

General Public Use of Environmental Education Places

Residents were asked which places they visit to learn about the environment. Chart 1 depicts facility use by adults. The highest percentage use checked by respondents is the parks category (57%); the lowest is the overnight environmental center category (1%).

Chart 1

Types of Places Minnesota Adults Go for Environmental Education
(% of annual visits)



Members of the general public were asked about the most important reasons for keeping them from making more visits for

each type of facility. Table 3 depicts the percentage responses for each facility.

Table 3

WHAT IS MOST IMPORTANT IN KEEPING YOU PERSONALLY FROM MAKING MORE VISITS TO EACH TYPE OF FACILITY?

(% responses from Minnesota residents who have indicated they have visited places for environmental education)

	Museums	Zoos	Parks	Overnight Centers	Day Use
No Interest	11.1%	11.1%	8.5%	26.7%	19.8%
No Time	51.2%	51.6%	63.2%	23.2%	35.8%
Too Far Away	22.3%	27.6%	12.0%	7.7%	8.6%
Too Expensive	6.2%	6.2%	4.8%	2.4%	2.2%
Unaware	8.5%	7.6%	7.4%	38.7%	31.7%
Nothing To Do	.7%	.9%	4.0%	1.4%	2.0%

Based on the data respondents indicated that for zoos, museums, and parks, 'no time' was the major reason for not visiting. 'Too far away' was also a major reason for not making more visits to museums and zoos.

'No time' was also a major factor for not visiting the two remaining types of facilities, overnight environmental centers and day-use nature centers. 'Unaware of them' and 'no interest' were also major response categories for both overnight and day-use facilities.

User awareness appears to be an important barrier to use of overnight and day-use facilities. For example, over 38 percent of the respondents checked the 'unaware of' category as a reason for not making more visits to overnight environmental centers (most important reason). These data along with the small percentage of adults using overnight environmental centers (see Chart 1) suggest that much of the general public simply is not aware of overnight environmental centers. Responses to the museum, parks, and zoos categories in Chart 1 and Table 3 suggest that Minnesota residents are more aware of them.

Since the primary mission of most environmental learning centers is student education, the lack of public knowledge about them is neither surprising nor does it suggest that these types of facilities are less important than zoos, parks, or museums. With respect to day-use centers, the terminology 'day-use center' may have been confusing to the survey respondents who may not associate day-use centers they visit with the term 'day-use center'.

As a part of this survey question, residents were asked what type of activities they did during their visit to an environmental education place. The most common responses were "walked on trails" and "visited an exhibit".

Features and Programs or Classes Which Promote Visitation of Environmental Education Facilities

Residents were asked which features would cause them to visit an environmental education facility more often. A majority of respondents checked all categories except 'professional staff' and 'handicapped accessibility'. The categories checked most often included 'hiking trails', 'self-guided nature trails', 'exhibits', 'live animals', and 'informational brochures'. These responses are not surprising since these are the types of features that environmental education facilities typically offer.

Residents were also asked if they were more likely to visit an environmental education facility if it offered 1) Family programs/classes; 2) Adult programs/classes; and, 3) Senior program/classes. None of the response percentages for these three categories exceeded 40 percent.

Finally, residents were asked the furthest they were willing to travel for a visit to each type of facility. Table 4 depicts their responses.

Table 4

WHAT IS THE FARTHEST YOU WOULD BE WILLING TO TRAVEL TO VISIT EACH TYPE OF FACILITY?

(% responses of Minnesota residents)

(In Miles)	0	1 - 10	11 - 50	51 - 100	101 - 250	250 or more
Science or Natural History Museums	3.1%	15.8%	51.4%	18.7%	7.0%	4.0%
Zoos	2.4%	12.6%	51.4%	22.8%	7.7%	3.1%
Parks	2.6%	17.8%	40.3%	18.5%	10.5%	10.3%
Overnight Env. Centers	14.9%	13.9%	44.0%	15.9%	5.9%	5.4%
Day-Use Nature Centers	8.1%	20.3%	53.5%	11.3%	2.8%	4.0%
Other Sites & Facilities	12.7%	16.8%	45%	13.5%	3.6%	8.4%

The data indicate that a majority of residents were unwilling to travel more than fifty miles to any of the five types of facilities. In fact, almost a third of respondents were unwilling to travel more than ten miles for overnight environmental centers and day-use nature centers. About 15 to 20 percent of Minnesota residents were unwilling to travel further than ten miles to visit a science/natural history museum, zoo, or park.

The data in Table 4 along with the resident responses depicted in Table 3 suggest that 'lack of time' is a major consideration on whether to visit a facility. While it is true that residents were unwilling to travel large distances to facilities, the unwillingness to travel long distance can be associated with time constraints. Long distances equal long travel times.

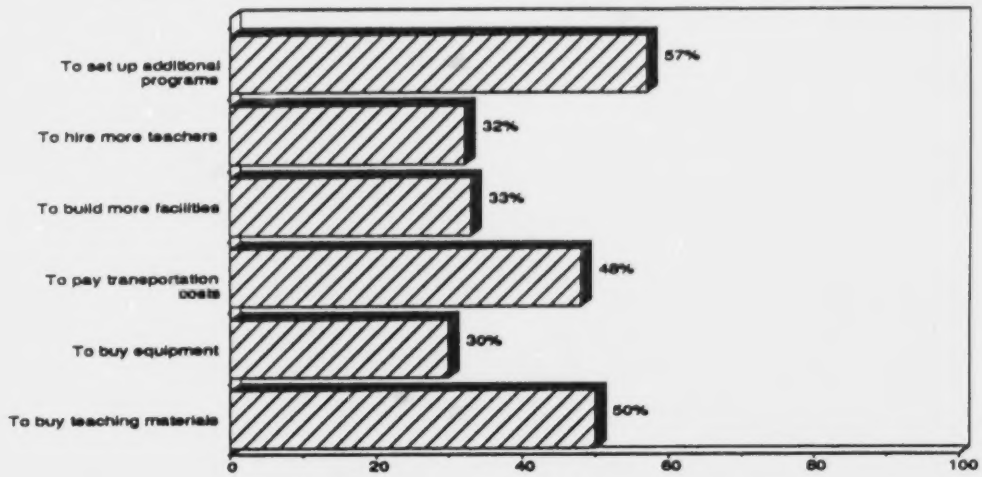
Additional Taxes to Improve Environmental Education

Minnesota residents were also asked if they were willing to pay additional income taxes each year to pay for environmental education. About 58 percent of respondents indicated they were willing to pay additional taxes; 42 percent were not. Table 5 depicts the spending preference responses for those who were willing to pay additional income taxes.

Table 5

PREFERENCE FOR WHERE TO SPEND ADDITIONAL STATE TAXES

(% of Minnesota residents who were willing to pay more taxes by categories)



About half of those willing to pay indicated a desire to fund 'additional programs', 'transportation costs', or 'teaching materials'. About a third of the respondents were willing to pay for equipment, hire more teachers, or build more facilities. The data suggest that residents who are willing to pay taxes primarily want to place their money in program development and in enhancement of access to environmental education facilities rather than on building facilities or hiring additional teachers.

IV. Teachers & Administrators: Responses About Their Knowledge

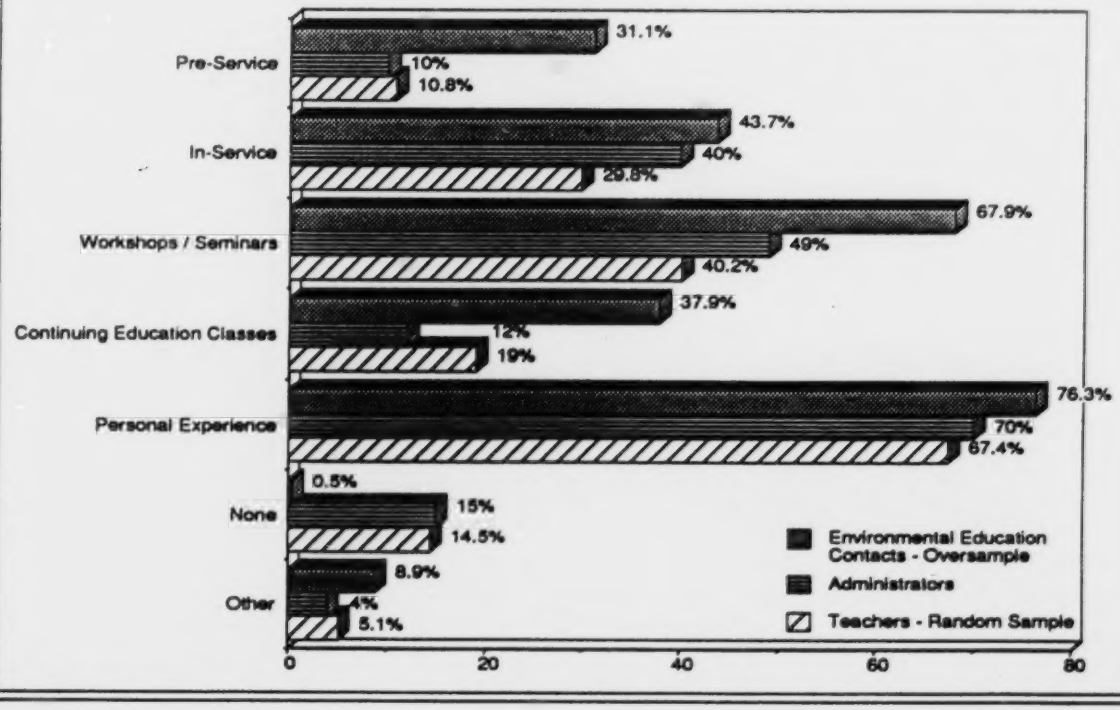
Knowledge & Training in Environmental Education

Teachers were asked whether they know enough about environmental education to incorporate it into their own teaching. About 77 percent of respondents thought that they 'definitely' or 'probably' know enough; about 13 percent indicated 'probably not', or 'definitely not'. The data suggest a large majority of teachers feel competent to work with environmental-related topics as a part of their work. Not surprisingly, 89 percent of the oversample of environmental education contacts responded that they 'definitely' or 'probably' know enough to teach environmental subjects as compared to 63 percent of the randomly selected teachers.

Randomly selected teachers, environmental education contacts, and administrators were also asked about their training in environmental education. Table 6 depicts their responses:

Table 6

WHAT KINDS OF TRAINING HAVE YOU HAD IN ENVIRONMENTAL EDUCATION?



A large majority of all three populations surveyed indicated that their training in environmental education is from personal experiences. Not surprisingly, a higher percentage of environmental education contacts responded that they had received training in all categories than the randomly-selected teachers or the administrators. Only .5 percent of environmental education contacts indicated they had no training as compared to approximately 15 percent of the administrators and randomly selected teachers.

Note that with the exception of 'personal experience' and 'workshops/seminars' for environmental education contacts, none of the training categories received a majority response from any of the three populations. The data suggest that many teachers conducting environmental education activities are working primarily with knowledge gained from personal experience.

V. Responses by Teachers Who Conducted Environmental Education

The following discussion on *Environmental Education Activities* and *K-12 Use of Environmental Education Facilities* concerns responses only from those teachers who conducted environmental education activities in the last year.

Environmental Education Activities

Approximately 65 percent of respondents indicate they conducted environmental education activities with students in the last year suggesting that most teachers are serious about incorporating environmental education into their work. Breaking out the teacher population, approximately 91 percent of the environmental education contact oversample and 63 percent of the randomly selected teachers conducted an environmental education activity in the last year.

Survey results also indicate that just over 40 percent of teachers who conduct environmental education activities develop their own environmental education materials and just over 40 percent of them use pre-packaged or purchased environmental education materials. Over 54 percent of environmental education contacts use pre-packaged or purchased materials as compared to about 38 percent of teachers.

K-12 Use of Environmental Education Places

Table 7 and 8 depict how many times teachers use the school grounds and non-school areas for environmental education.

Table 7

DURING THE CURRENT SCHOOL YEAR, HOW MANY TIMES WILL THE STUDENTS IN YOUR CLASSES USE THE SCHOOL GROUNDS FOR ENVIRONMENTAL EDUCATION EXPERIENCES?

(% responses by teachers who conducted environmental education activities with students)

# of Times	0	1	2	3 - 5	6 - 10	11 - 30	31 or more
	22.4%	11.6%	21.0%	27.7%	10.6%	5.1%	1.1%

Table 8

DURING THE CURRENT SCHOOL YEAR, HOW MANY TIMES WILL THE STUDENTS IN YOUR CLASSES GO OFF THE SCHOOL GROUNDS FOR ENVIRONMENTAL EDUCATION EXPERIENCES?

(% responses by teachers who conducted environmental education activities with students)

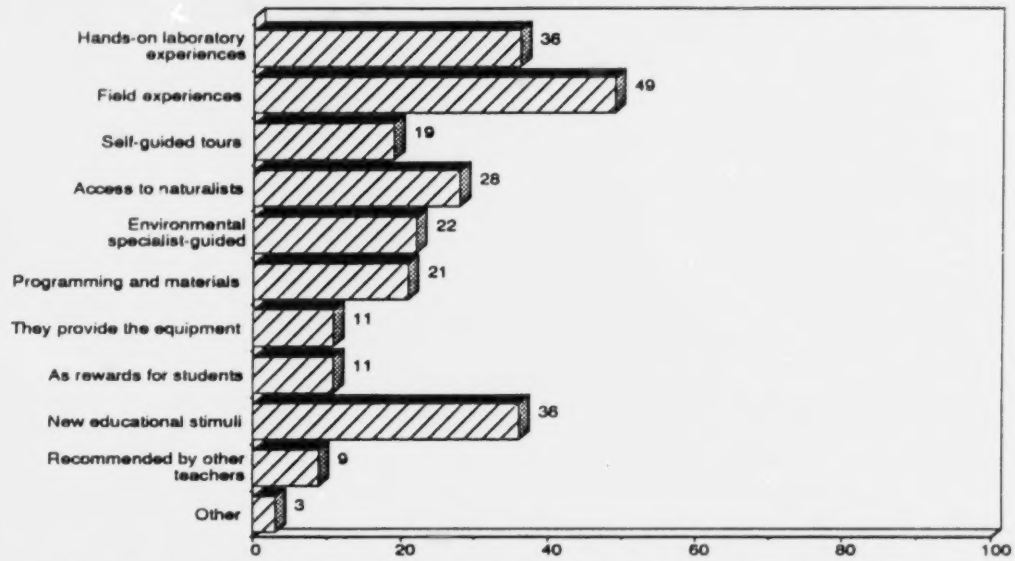
# of Times	0	1	2	3 - 5	6 - 10	11 - 30	31 or more
	29.9%	26.2%	20.1%	17.5%	3.8%	2.0%	.5%

The data indicate that over 77 percent of teachers used school grounds at least once for environmental education and just over 70 percent of teachers conducted an environmental activity at least once off school grounds. Not surprisingly, school grounds are used more frequently. Almost half (44%) use school grounds three times or more while only about a quarter (24%) use off-school sites three times or more.

Teachers were asked why they take students off the school grounds for environmental education. Table 9 depicts their responses. The three highest percentage responses were for 'field experiences', 'new educational stimuli', and 'hands-on laboratory experiences'. These three categories were the most commonly checked by environmental education contacts as well. 'Access to naturalists' was also relatively important.

Table 9

WHY DO YOU TAKE YOUR STUDENTS OFF THE SCHOOL GROUNDS FOR ENVIRONMENTAL EDUCATION EXPERIENCE?



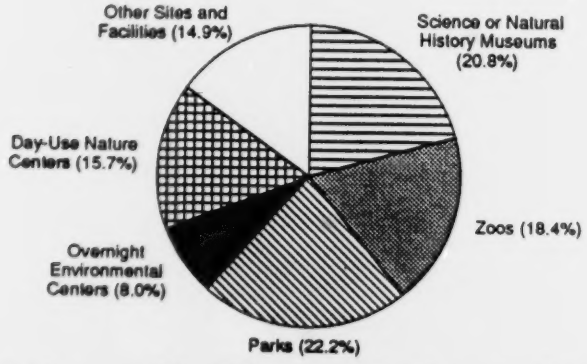
(Results will not equal 100%)

Teacher Rating of the Environmental Education Experience

Teachers were also asked to rate the quality of the environmental education experience. Responses for all types of facilities are positive. A majority of teachers indicated that the quality of the environmental education experience is 'good". Over 95 percent of teachers rated facilities as 'good' or 'fair'.

Chart 2 depicts facility use by K-12 school children based on school year visits.

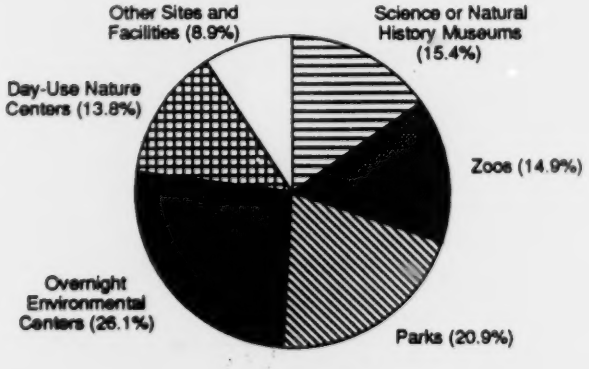
Percent of School Year Visits



None of the six types of facilities received more than about 22 percent of the responses. Parks received the largest response rate (22.2%); overnight environmental learning centers received the fewest responses (8%).

Chart 3 depicts facility use by K-12 children based on instruction hours.

Percent of School Year Instruction Hours
(six instruction hours per day assumed for each full day of a visit to an overnight facility; all other visit lengths are as reported in survey and are typically 3 to 4 hours)



The data suggest that overnight environmental centers provide the largest percentage of instruction hours followed by parks, science or natural history museums, zoos, day use nature centers, and other facilities.

Charts 2 and 3 provide different measures for looking at environmental education. Neither chart should be considered to be more informative than the other. In each case the variable being measured is different. While more children are exposed to environmental education through non-residential facilities, those attending residential facilities spend more concentrated time on environmental topics.

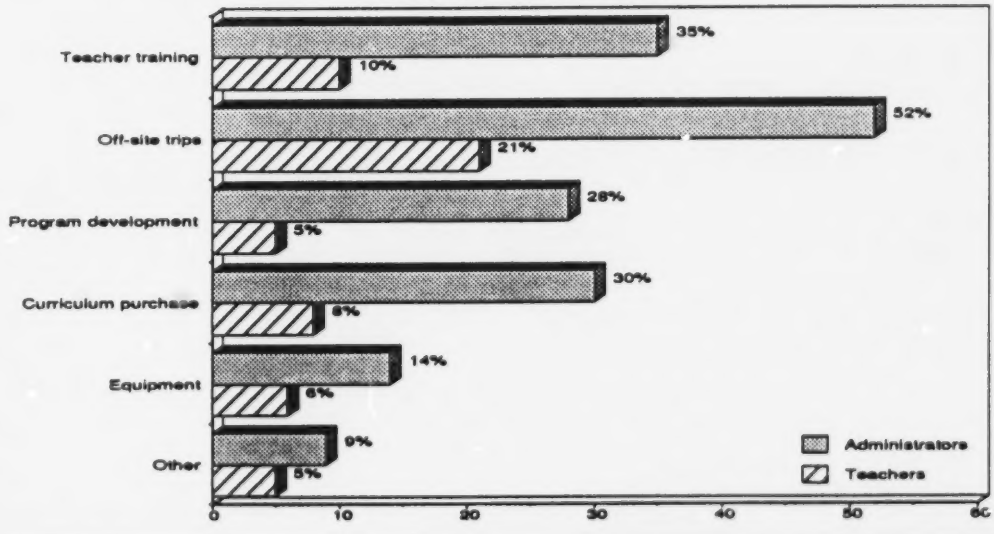
VI. Teachers & Administrators: Responses on Finances, Environmental Education Places, & Incentives

Financial Support Received for Environmental Education Activities

Both teachers who had conducted environmental activities and administrators were asked about the kinds of financial support received for environmental activities:

Table 10

OVER THE PAST 12 MONTHS, WHAT TYPES OF FINANCIAL SUPPORT HAVE BEEN PROVIDED FOR ENVIRONMENTAL EDUCATION EXPERIENCES IN YOUR SCHOOL DISTRICT?



The data indicate that a large majority of teachers conducting environmental education activities, did not receive financial support.

The highest teacher response, only 21 percent, is for off-site trips. Administrators responded to the questions more affirmatively. Even so, the highest administrator response was 52 percent for off-site trip support.

The apparent discrepancy between respondents can be explained. While an administrator may accurately indicate that support is available for a particular financial support category, only a small group of teachers within that administrator's jurisdiction may receive the support due to limited funding or other constraints precluding the environmental education experience. Further follow-up beyond the scope of this survey is necessary to validate this conclusion.

Comparing responses from the oversample of environmental education contacts with responses from randomly-selected teachers changes the results for three categories in Table 10:

	Random Sample	*EE Contacts*
TEACHER TRAINING	9%	16%
OFF-SITE TRIPS	18%	39%
EQUIPMENT	5%	11%

More than twice as many environmental education contacts received funding for off-site trips as randomly-selected teachers although the specialist response rate is still under 40 percent. Environmental education contacts were also twice as likely to receive funding for equipment and training, however, the number was still less than 20 percent. Note also that the environmental education contact response percentages for these three categories is still smaller than the administrator response percentages.

Places for Environmental Education

Both teachers of environmental education and teachers who do not conduct environmental-related activities in their work were asked a variety of questions regarding places for teaching environmental education.

Approximately 79 percent of teachers responding to the survey indicated they have a place near the school where they can teach environmental education. Breaking out the teacher groups, environmental education contacts were more likely to respond that they have a location near school (91 percent) than randomly selected teachers (77 percent) suggesting that the contacts have more knowledge about the locality of environmental education sites or are more creative in using what sites are available for environmental education. Table 11 indicates that almost 97 percent of those teachers with a place to teach environmental education nearby, had a location within thirty miles of the school; over two thirds had a location within five miles.

Table 11

WHETHER YOU TEACH ENVIRONMENTAL EDUCATION OR NOT, DO YOU HAVE ANY KIND OF PLACE NEAR SCHOOL THAT YOU COULD USE FOR ENVIRONMENTAL EDUCATION WITH STUDENTS IN YOUR CLASS?

(distances listed for those respondents who checked "Yes")

(In Miles)	0	1	2 - 5	6 - 10	11 - 30	31 - 50	51 - 150	151 or more
	5.5%	31.2%	30.7%	14.9%	14.6%	1.7%	1.3%	.1%

Teachers were also asked how far they would travel to take students to an off-site environmental education experience. Table 12 indicates that about 30 percent of teachers are willing to take their students further than 50 miles for a day experience; and about 60 percent are willing to take their students more than 50 miles for an overnight experience. Note that 25 percent of the teachers would not take students on an overnight trip.

Table 12

WHAT IS THE FARTHEST DISTANCE YOU WOULD BE WILLING TO TRAVEL (ONE WAY) TO TAKE YOUR STUDENTS FOR A ONE-DAY ENVIRONMENTAL EDUCATION EXPERIENCE?

(% responses by teachers who conducted environmental education activities with students)

(In Miles)	0	1 - 10	11 - 50	51 - 100	101 - 250	250 or more
One-Day	4.7%	8.6%	56.1%	23.3%	6.5%	.8%
Overnight	24.9%	1.1%	14.6%	27.9%	25.9%	5.6%

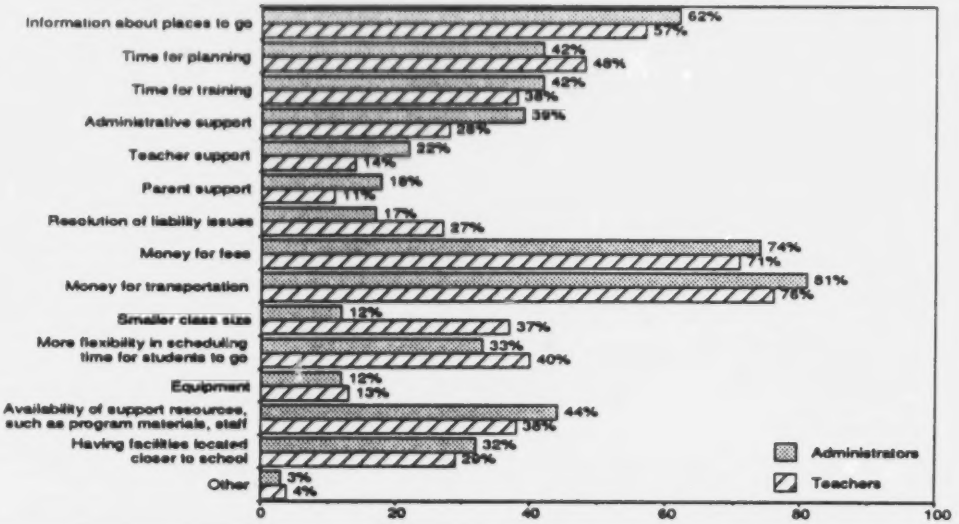
Frequency of Taking Students off-site for Environmental Education & What Would Allow Students to Leave School Grounds More Often for Environmental Education

Teachers were asked if they take their students off the school grounds for environmental education as often as they like. 81 percent of the teachers responded that they did not.

Teachers were asked what would allow them to take their students off school grounds more often and which of the choices offered is most important. Administrators were also asked what would allow teachers to take students off school grounds for environmental education, and which of the choices offered is most important. The administrator and teacher responses to these questions are compared in the two tables below. Table 13 compares response percentages to categories of items that would allow teachers to take students off school grounds:

Table 13

WHICH OF THE FOLLOWING WOULD ALLOW TEACHERS IN YOUR SCHOOL DISTRICT TO TAKE STUDENTS OFF THE SCHOOL GROUNDS FOR ENVIRONMENTAL EDUCATION EXPERIENCES MORE OFTEN?



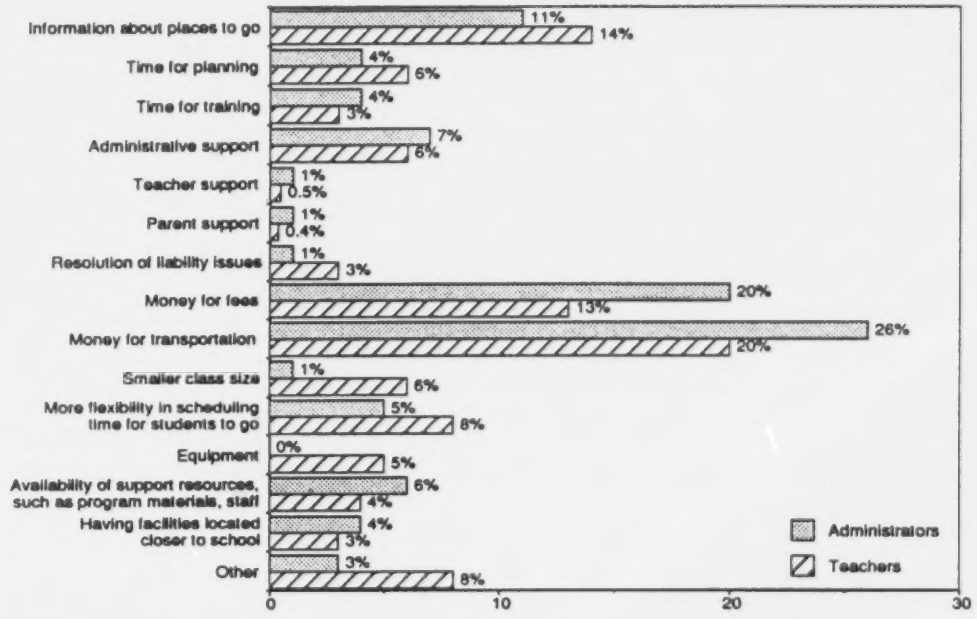
The highest response categories for both teachers and administrators respectively were: 1) money for transportation (81% and 76%); 2) money for fees (74% and 71%); and 3)

information about places to go (62% and 57%). Clearly, funding for costs associated with off-site environmental education is of primary importance to both teachers and administrators. For environmental education contacts, 'information about places to go' (46%) is less important than for randomly selected teachers (59%), but 'other teachers being more supportive' (18%) is more important than for randomly selected teachers (13%).

Table 14 depicts which of the categories teachers and administrators believe is most important:

Table 14

WHICH OF THE ANSWERS IN TABLE 13 IS THE MOST IMPORTANT?



(note: administrators could list more than one response to this question, so percentages will total greater than 100%; teachers could list only one answer, so teacher percentages will equal 100%)

Again, money for fees, money for transportation, and information about places to go were most often listed as the most important items.

Breaking out the oversample of environmental education contacts from randomly sampled teachers yields slightly different results. Environmental education contacts do not place as much importance on 'information about places to go' (9%) as did the random sample of teachers (14%) and responded that 'more flexibility in scheduling time for students to go' was important

(14% versus 7% respectively). Even so, 'money for fees' (20% contacts, 20% general teachers respectively), and 'money for transportation' (14% contacts and 12% general teachers respectively) remain the top response categories for environmental education contacts and randomly selected teachers alike allowing them to take students off-school grounds more often.

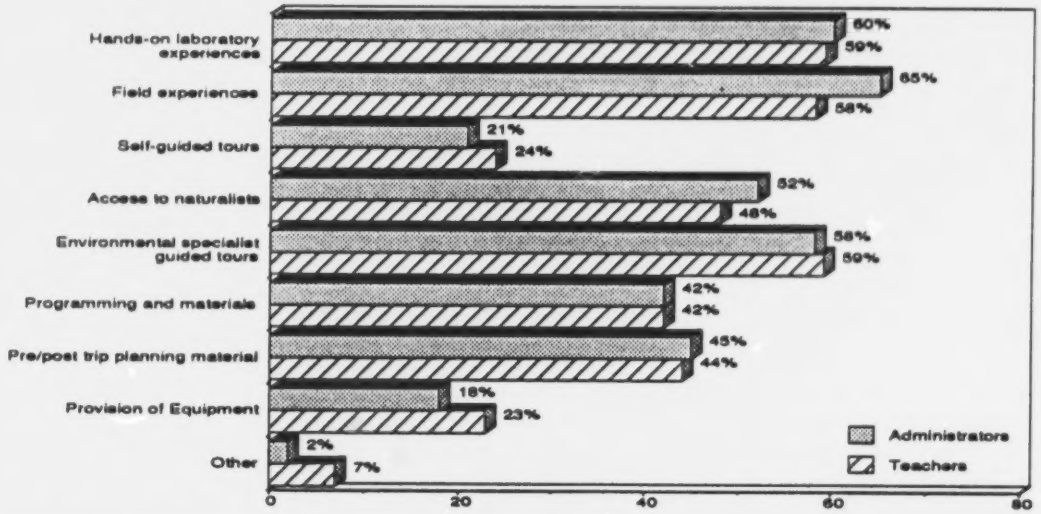
Program Incentives to Leave School Grounds

Teachers and administrators were asked which of several service categories would prompt teachers to go off the school grounds for environmental education more often.

Table 15 lists and compares teacher and administrator responses:

Table 15

WHICH OF THE FOLLOWING SERVICES WOULD PROMPT TEACHERS IN YOUR SCHOOL DISTRICT TO GO OFF THE SCHOOL GROUNDS FOR ENVIRONMENTAL EDUCATION EXPERIENCES MORE OFTEN?



The top responses include: 'hands-on laboratory experiences', 'field experiences', 'environmental specialist-guided tours', and 'access to naturalists'. The high response rate for these categories are not surprising since they represent activities which off-site facilities are well suited to offer. A greater percentage of environmental education contacts (66.3%) responded that the 'hands-on

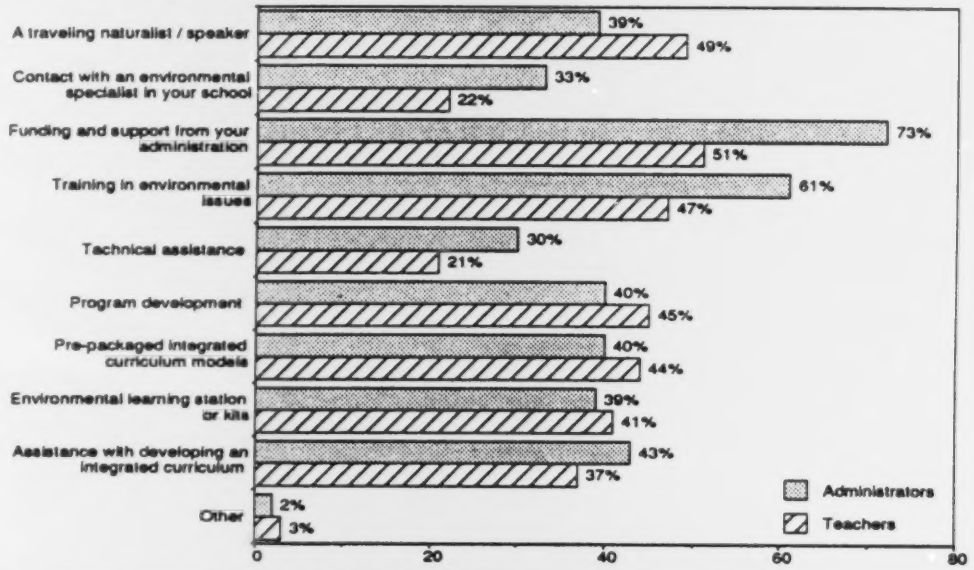
experience' was an incentive, as opposed to 57.2 percent of randomly selected teachers. The top response categories listed in Table 15 above for environmental education contacts and randomly selected teachers alike, however, remain the same.

Assistance to Conduct Environmental Education

Teachers and administrators were asked what kind of help teachers need to conduct environmental education activities with students at schools. Table 16 depicts and compares their responses.

Table 16

WHAT KIND OF HELP DO YOU NEED TO DO ENVIRONMENTAL EDUCATION ACTIVITIES WITH STUDENTS AT YOUR SCHOOL?



The majority of administrators replied that teachers need 'funding and support' (73%) and 'training in environmental issues' (61%) to do environmental education activities with students. A majority of teachers also listed these two types of needs as being important (51% and 47% respectively). Teachers also indicated that a "traveling naturalist/speaker' (49%) would help in carrying out environmental education activities with schools.

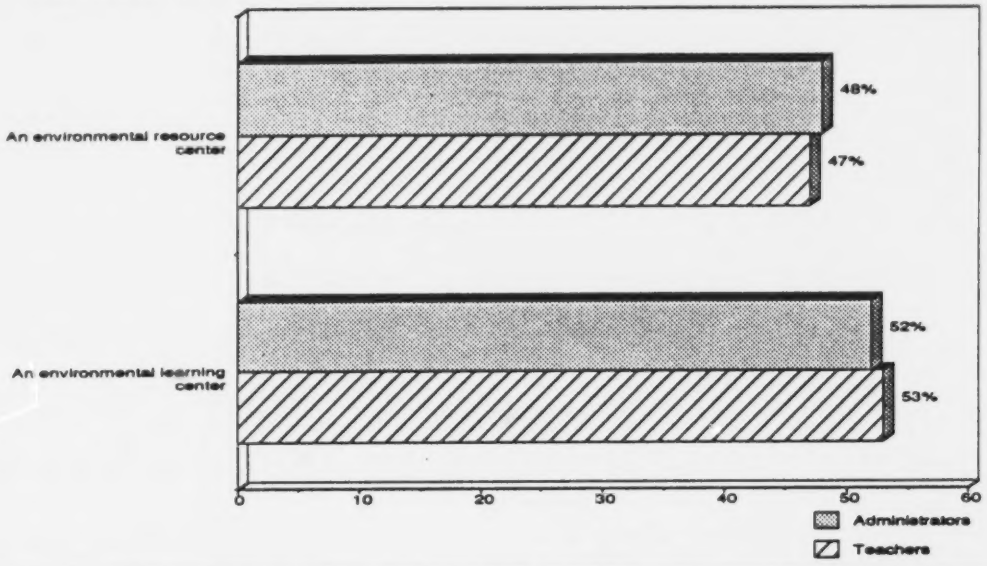
Environmental education contacts do not believe they need training in environmental education issues (35.3 percent responded affirmatively) as compared to the randomly-selected

teachers (50 percent). For all other categories in this question, the responses of randomly selected teachers and environmental education contacts do not differ markedly.

Finally, teachers and administrators were asked whether they need an environmental resource center or an environmental learning center most to effectively teach environmental education to students. An environmental resource center is defined as a place where the teacher can obtain teaching materials, program ideas, training, and other assistance; an environmental learning center is defined as a place where the teacher can take the students for a hands-on environmental experience.

Table 17

WHAT DO TEACHERS IN YOUR SCHOOL DISTRICT NEED MOST TO EFFECTIVELY TEACH ENVIRONMENTAL EDUCATION TO STUDENTS?



Both teachers and administrators were split almost evenly on whether an environmental resource center or an environmental learning center is needed most. The split response suggests that both types of centers are viewed as being very important to effective environmental education.

Additional Administrator Responses

Two additional questions were asked of administrators which offer more information about the role of environmental education in

school districts. First, administrators were asked whether there is a formal written plan for environmental education in the school district--77 percent responded "no". Similarly, 95 percent of administrators indicated that their school district does not have a separate budget line for environmental education activities.

Policies are implemented through budgets and plans; the lack of specific reference to environmental education for both may indicate that environmental education is not a priority for most school districts. Note that the survey did not ask if there were line budget items or specific plans for curricula such as sports, math, or English as well. These educational areas may also lack specific plans or budget items at the district level. In order to determine the priority of environmental education with respect to other curricula based on plans or line-item budgets, more data is necessary.

Even so, the lack of specific plans and a budget item for environmental education in most school districts suggests at minimum, environmental education is probably not considered to be a special or priority educational item in Minnesota.

APPENDIX

A SURVEY OF MINNESOTA RESIDENTS ABOUT THE ENVIRONMENT

Minnesota Center for Survey Research
University of Minnesota
2122 Riverside Avenue
Minneapolis, Minnesota 55454-1320
(612) 627-4282

A SURVEY OF MINNESOTA RESIDENTS ABOUT THE ENVIRONMENT

We need your help to find out what people in Minnesota know about the environment. Only about one out of every 600 Minnesota households are being sent this survey. It should be filled out by the member of your household who had the most recent birthday, and who is 18 or older.

Please write your answer below the question or circle the number which corresponds to the answer closest to your opinion or your current situation. All individual responses will be kept confidential.

Q1. We're trying to find out what the term "environment" means to people. Which of the following would you consider to be environmental topics? (Circle one answer for each item)

	Yes	No	Not Sure
a. Economic growth forecasts.	1	2	3
b. Farming methods.	1	2	3
c. Global warming theories.	1	2	3
d. AIDS	1	2	3
e. Planets in our solar system.	1	2	3
f. Pollution.	1	2	3
g. Population growth trends	1	2	3
h. Solid waste disposal	1	2	3
i. Urban growth trends.	1	2	3
j. Use of fossil fuels.	1	2	3
k. The variety of plants/animals in Minnesota	1	2	3
l. Water quality.	1	2	3

Q2. How well informed are you about the environment? (Circle one)

1. Very informed
2. Somewhat informed
3. Not very informed
4. Not at all informed

Q3. How interested are you in environmental issues? (Circle one)

1. Very interested
2. Somewhat interested
3. Not very interested
4. Not at all interested

Q4. Here are some sources from which you might get information on environmental problems and issues. Is each item on the list a major source, a minor source, or not a source of environmental information for you? (Circle one answer for each item)

	Major Source	Minor Source	Not a Source
a. Your state and local government	1	2	3
b. The federal government	1	2	3
c. TV news	1	2	3
d. TV news magazine shows, such as 60 Minutes or 20/20	1	2	3
e. Radio	1	2	3
f. Newspapers	1	2	3
g. Magazines	1	2	3
h. Local schools	1	2	3
i. Environmental groups	1	2	3
j. Local civic groups	1	2	3
k. Large corporations	1	2	3
l. The businesses in your community	1	2	3
m. Friends and other people	1	2	3
n. Your children	1	2	3
o. Science or natural history museums	1	2	3
p. Zoos	1	2	3
q. National or state parks	1	2	3
r. Overnight environmental centers	1	2	3
s. A nature center that is not located at a national or state park	1	2	3
t. Other local parks	1	2	3
u. Other (SPECIFY)	1	2	3

Q5. If you needed more environmental information, how likely would you be to go to each of the following sources? (Circle one answer for each item)

		Very Likely	Somewhat Likely	Not very Likely
a.	Your state and local government . . .	1	2	3
b.	The federal government.	1	2	3
c.	TV news	1	2	3
d.	TV news magazine shows, such as 60 minutes or 20/20.	1	2	3
e.	Radio	1	2	3
f.	Newspapers.	1	2	3
g.	Magazines	1	2	3
h.	Local schools	1	2	3
i.	Environmental groups.	1	2	3
j.	Local civic groups.	1	2	3
k.	Large corporations.	1	2	3
l.	The businesses in your community. . .	1	2	3
m.	Friends and other people.	1	2	3
n.	Your children	1	2	3
o.	Science or natural history museums . .	1	2	3
p.	Zoos.	1	2	3
q.	National or state parks	1	2	3
r.	Overnight environmental centers . . .	1	2	3
s.	A nature center that is not located at a national or state park.	1	2	3
t.	Other local parks	1	2	3
u.	Other (SPECIFY)	1	2	3

_____

Q6. Please answer the following three questions about places you might go to learn about the environment. In the past year, have you <u>personally</u> visited any of the following types of places for environmental education? Write in zeros for the places you did <u>not</u> visit. Please remember to answer only for yourself.

	How many times have <u>you</u> visited in the past year? # of Times	What did <u>you</u> do during your visit? (Circle all that apply) Participated in a program	Viewed an exhibit	Walked on trails	Attended a class	Something else	Did anyone else in your family ever go along? Yes	No
A. SCIENCE OR NATURAL HISTORY MUSEUMS	_____	a	b	c	d	e	1	2
(SPECIFY) _____								
B. ZOOS	_____	a	b	c	d	e	1	2
(SPECIFY) _____								
C. PARKS	_____	a	b	c	d	e	1	2
(SPECIFY) _____								
D. OVERNIGHT ENVIRONMENTAL CENTERS	_____	a	b	c	d	e	1	2
(SPECIFY) _____								
E. DAY-USE NATURE CENTERS	_____	a	b	c	d	e	1	2
(SPECIFY) _____								
F. OTHER SITES AND FACILITIES	_____	a	b	c	d	e	1	2
(SPECIFY) _____								

(IF YOU PERSONALLY HAVE NOT VISITED ANY OF THESE TYPES OF PLACES IN THE PAST YEAR, PLEASE CHECK HERE AND SKIP TO QUESTION 7 ON PAGE 7) ☐

Q7. Please answer the following two questions even if you have not personally visited any of these environmental education facilities. Please remember to answer only for yourself.

	Q7a. What is most important in keeping you personally from making more visits to each type of facility? (Write one number from below) 1. No interest 2. No time 3. Too far away 4. Too expensive 5. Unaware of them 6. Nothing to do there	Q7b. What is the farthest you would be willing to travel to visit each type of facility? (Record number of miles for one way trip)
A. SCIENCE OR NATURAL HISTORY MUSEUMS (SPECIFY) _____	_____	_____ miles
B. ZOOS (SPECIFY) _____	_____	_____ miles
C. PARKS (SPECIFY) _____	_____	_____ miles
D. OVERNIGHT ENVIRONMENTAL CENTERS (SPECIFY) _____	_____	_____ miles
E. DAY-USE NATURE CENTERS (SPECIFY) _____	_____	_____ miles
F. OTHER SITES AND FACILITIES (SPECIFY) _____	_____	_____ miles

Q8. Would you be willing to pay $5 each year in additional state income taxes to improve environmental education?

1. Yes ===> How would you prefer to have this money spent?
2. No (Circle all that apply)

a. To set up additional programs
b. To hire more teachers
c. To build more facilities
d. To pay transportation costs to get students to environmental education centers
e. To buy equipment
f. To buy teaching materials
g. Other (SPECIFY) _____

Q9. Would you personally be more likely to visit an environmental education facility more often if it had the following features? (Circle one answer for each item)

	Yes	No	Not sure
a. Hiking trails.	1	2	3
b. Self-guided nature trails . . .	1	2	3
c. Other self-guided activities . .	1	2	3
d. Exhibits	1	2	3
e. Live animals	1	2	3
f. Informational brochures.	1	2	3
g. Professional staff	1	2	3
h. Handicapped accessibility. . . .	1	2	3

Q10. Would you personally be more likely to visit an environmental education facility if it had the following types of programs or classes? (Circle one answer for each item)

	Yes	No	Not sure
a. Family programs/classes.	1	2	3
b. Adult programs/classes	1	2	3
c. Senior programs/classes.	1	2	3

Q11. Are you aware of your local school district's community education program? (Circle one)

1. Yes ===> Does it offer classes on the environment? (Circle one)
   1. Yes ===> What are the classes about?
   2. No
2. No

Q12. In the past two years, have you taken a community education class that dealt with environmental issues? (Circle one)

1. Yes ===> Please describe the classes:
2. No

Q13. Are you aware that environmental education is required to be taught in your local school (kindergarten - 12th grade)? (Circle one)

1. Yes
2. No

Q14. How important is it to include environmental concepts in the following subject areas?

	Very Important	Somewhat Important	Not very Important
a. Social studies.	1	2	3
b. Music	1	2	3
c. Mathematics	1	2	3
d. Art	1	2	3
e. Reading/English	1	2	3
f. Science	1	2	3
g. Physical education. . .	1	2	3

Please answer the following set of questions about yourself. This information will be used only to compare people's answers. It will not be used to identify you in any way.

Q15. What year were you born?

1 ___ ___ ___

Q16. Are you male or female?

1. Male
2. Female

Q17. What race do you consider yourself? (Circle one)

1. American Indian
2. Oriental/Asian
3. Black/African American
4. Hispanic (Chicano/Latino)
5. White/Caucasian
6. Other (SPECIFY) _____

Q18. What is the highest level of education you have completed? (Circle one)

1. 8th grade or less
2. Some high school
3. High school graduate
4. Some technical school
5. Technical school graduate
6. Some college
7. College graduate
8. Post-graduate or professional degree

Q19. Are you retired?

1. Yes
2. No

Q20. Do you rent or own your housing unit?

1. Rent
2. Own

Q21. What county do you live in?

_____

Q22. What is your zip code?

_____

Q23. Which of the following best describes the area where you live? (Circle one)

1. On a farm
2. In a rural area, but not on a farm
3. In a city or town with a population under 5,000
4. In a city or town with a population between 5,000 and 10,000
5. In a city or town with a population over 10,000
6. Don't know

Q24. Which of the following groups do you belong to? (Circle all that apply)

a. Audubon Society
b. Bass Angler Society
c. Conservation Federation
d. Ducks Unlimited
e. Earth First
f. Friends of the Earth
g. Greenpeace
h. Izaak Walton League
i. Minnesota Deer Hunter Association
j. National Wildlife Federation
k. Natural Resources Defense Council
l. Nature Conservancy
m. Sierra Club
n. Trout Unlimited
o. Other (Please specify) _____

Q25. What is your marital status? (Circle one)

1. Married
2. Living with partner
3. Single
4. Widowed
5. Divorced

Q26. How many adults 18 and over live in your household, including yourself, or do you live alone?

_____

01. Live alone

Q27. How many children in each age category live in your household?

_____ Age 1 to 5

_____ Age 6 to 11

_____ Age 12 to 17

Q28. What was your total household income in 1990? (Circle one)

1. Under $10,000
2. $10,000 - $14,999
3. $15,000 - $19,999
4. $20,000 - $24,999
5. $25,000 - $29,999
6. $30,000 - $34,999
7. $35,000 - $39,999
8. $40,000 - $49,999
9. $50,000 - $74,999
0. $75,000 and over

Q29. Do you have any other comments you would like to make about environmental issues or environmental education in Minnesota?

Thank you for your time and your cooperation.

Please return this survey in the enclosed postage paid envelope to:

Minnesota Center for Survey Research
University of Minnesota
2122 Riverside Avenue
Minneapolis, Minnesota 55454-1320

A SURVEY OF MINNESOTA TEACHERS ABOUT THE ENVIRONMENT AND ENVIRONMENTAL EDUCATION

Minnesota Center for Survey Research
University of Minnesota
2122 Riverside Avenue
Minneapolis, Minnesota 55454-1320
(612) 627-4282

A SURVEY OF MINNESOTA TEACHERS ABOUT THE ENVIRONMENT AND ENVIRONMENTAL EDUCATION

We need your help to find out what Minnesota teachers know about the environment and to identify current practices in environmental education.

Please write your answer below the question or circle the number which corresponds to the answer closest to your opinion or your current situation. All individual responses will be kept confidential.

Q1. How well informed are you about the environment? (Circle one)

1. Very informed
2. Somewhat informed
3. Not very informed
4. Not at all informed

Q2. How interested are you in environmental issues? (Circle one)

1. Very interested
2. Somewhat interested
3. Not very interested
4. Not at all interested

Q3. How important is it to include environmental concepts in the following subject areas? (Circle one answer for each item)

	Very Important	Somewhat Important	Not very Important
a. Social studies. . .	1	2	3
b. Music	1	2	3
c. Mathematics	1	2	3
d. Art	1	2	3
e. Reading/English . .	1	2	3
f. Science	1	2	3
g. Physical education.	1	2	3

Q4. Here are some sources from which you might get information on environmental education resources and services. Is each item on the list a major source, a minor source, or not a source of information for you about environmental education resources and services? (Circle one answer for each item)

		Major Source	Minor Source	Not a Source
a.	Your state and local government	1	2	3
b.	The federal government	1	2	3
c.	TV news	1	2	3
d.	TV news magazine shows, such as 60 Minutes or 20/20	1	2	3
e.	Radio	1	2	3
f.	Newspapers	1	2	3
g.	Magazines	1	2	3
h.	Local schools	1	2	3
i.	Environmental groups	1	2	3
j.	Local civic groups	1	2	3
k.	Large corporations	1	2	3
l.	The businesses in your community	1	2	3
m.	Friends and other people	1	2	3
n.	Your children	1	2	3
o.	Educational Cooperative Service Units (ECSU'S)	1	2	3
p.	Science or natural history museums	1	2	3
q.	Zoos	1	2	3
r.	National or state parks	1	2	3
s.	Overnight environmental centers	1	2	3
t.	A nature center that is <u>not</u> located at a national or state park	1	2	3
u.	Other local parks	1	2	3
v.	Other (Please Specify)	1	2	3

_____

Q5. Does your school have an environmental education contact person?

1. Yes
2. No

Q6. When you think of environmental education, what do you think of?

Q7. Do you feel you know enough about environmental education to incorporate it into your own teaching? (Circle one)

1. Definitely
2. Probably
3. Maybe
4. Probably not
5. Definitely not

Q8. What kinds of training have you had in environmental education? (Circle all that apply)

a. Pre-service (Formal instruction prior to certification)
b. In-service
c. Workshops/seminars
d. Continuing Education classes
e. Personal experience
f. None
g. Other ===> Please specify:

Q9. Have you conducted any environmental education activities with the students in your classes since the current school year started? (If you are not a classroom teacher this year, circle '2. No' and skip to Q17 on page 8)

1. Yes
2. No ===> SKIP TO Q17 ON PAGE 8

Q10. Have you developed your <u>own</u> environmental education materials? (Circle one)

1. Yes ===> Please describe:
2. No

Q11. Are you using environmental education curriculum programs/packages in your classes that were pre-packaged or purchased? (Circle one)

1. Yes ===> Please describe:
2. No

Q12. Over the past 12 months, what types of financial support have you received for environmental education experiences? (Circle all that apply and describe all support you have received)

Type of Support		Description of Financial Support
a. Teacher training	===>	
b. Off-site trips	===>	
c. Program development	===>	
d. Curriculum purchase	===>	
e. Equipment	===>	
f. Other	===>	

Q13. During the current school year, how many times will the students in your classes use the school grounds for environmental education experiences?

____ NUMBER OF TIMES

Q14. During the current school year, how many times will the students in your classes go off the school grounds for environmental education experiences? (Include both indoor and outdoor experiences)

____ NUMBER OF TIMES

Q15. During the current school year, have you taken or do you plan to take students in your classes to any of the following places for environmental education? (Please use one line for each visit. Photocopy grid to include additional places if necessary.)

	Please name each place.	How many miles (one way)?
A. SCIENCE OR NATURAL HISTORY MUSEUMS	_____	_____ miles
	_____	_____ miles
	_____	_____ miles
B. ZOOS	_____	_____ miles
	_____	_____ miles
	_____	_____ miles
C. PARKS	_____	_____ miles
	_____	_____ miles
	_____	_____ miles
D. OVERNIGHT ENVIRONMENTAL CENTERS	_____	_____ miles
	_____	_____ miles
	_____	_____ miles
E. DAY-USE NATURE CENTERS	_____	_____ miles
	_____	_____ miles
	_____	_____ miles
F. OTHER SITES AND FACILITIES	_____	_____ miles
	_____	_____ miles
	_____	_____ miles

(IF YOU WILL NOT BE TAKING STUDENTS TO ANY OF THESE TYPES OF PLACES DURING THE CURRENT SCHOOL YEAR, PLEASE CHECK HERE AND SKIP TO QUESTION 17 ON PAGE 8) ☐

Number of students	Average # of hours each student spent at this place?	Average # of hours each student spent with a guide or naturalist?	Please rate the quality of the environmental education experience. Good	Fair	Poor
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3
____	____	____	1	2	3

Q16. Why do you take your students off the school grounds for environmental education experiences? (Circle all that apply)

a. Hands-on laboratory experiences
b. Field experiences
c. Self-guided tours
d. Access to naturalists
e. Environmental specialist-guided tours
f. Programming and materials
g. They provide the equipment
h. As rewards for students
i. New educational stimuli
j. Recommended by other teachers
k. Other ===> Please specify:

****

EVERYONE SHOULD ANSWER THE REMAINING QUESTIONS

Q17. Whether you teach environmental education or not, do you have any kind of place near school that you could use for environmental education with students in your class? (Circle one)

1. Yes ===>
2. No

What type of place is it?

How far from school is it?

_____ miles one-way

Please briefly describe how it is used or how you might use it.

Q18. What is the farthest distance you would be willing to travel (one-way) to take your students for a one-day environmental education experience?

_____ miles

Q19. What is the farthest distance you would be willing to travel (one-way) to take your students for an overnight environmental education experience?

_____ miles

Q20. Do you take your students off the school grounds for environmental education experiences as often as you would like?

1. Yes
2. No

Q21. Which of the following would allow you to take your students off the school grounds for environmental education experiences more often? (Circle all that apply)

a. Information about places to go
b. Time for planning
c. Time for training
d. School administration being more supportive
e. Other teachers being more supportive
f. Parents being more supportive
g. Resolution of liability issues
h. Money for fees
i. Money for transportation
j. Smaller class size
k. More flexibility in scheduling time for students to go
l. Equipment
m. Availability of support resources, such as program materials, staff
n. Having facilities located closer to school
o. Other ==> Please specify:

Q22. Which of the answers in Q21 is the <u>most important</u>?

____ Please write in one letter

Q23. Which of the following services would prompt you to go off the school grounds for environmental education experiences more often? (Circle all that apply)

a. Hands-on laboratory experiences
b. Field experiences
c. Self-guided tours
d. Access to naturalists
e. Environmental specialist-guided tours
f. Programming and materials
g. Pre/post trip planning materials
h. Provision of equipment
i. Other ===> Please specify:.

Q24. What kind of help do you need to do environmental education activities with students at your school? (Circle all that apply)

a. A traveling naturalist/speakers
b. Contact with an environmental specialist in your school
c. Funding a support from your administration
d. Training on environmental issues
e. Technical assistance
f. Program development
g. Pre-packaged integrated curriculum models
h. An environmental learning station or kits
i. Assistance with developing an integrated curriculum
j. Other ===> Please specify:

Q25. What do you need <u>most</u> to effectively teach environmental education to your students: (1) an environmental <u>resource</u> center where you can get teaching materials, program ideas, training, and other assistance; or (2) an environmental <u>learning</u> center where you can take your students for a hands-on environmental experience? (Circle one)

1. An environmental resource center
2. An environmental learning center

Please answer the following set of questions about yourself. This information will be used only to categorize people's answers. It will not be used to identify you in any way.

Q26. How many years have you worked as a classroom teacher?

____ Years

Q27. Are you a classroom teacher this year? (Circle one)

1. Yes
2. No

Q28. In which grade level do you do the majority of your teaching? (Circle one)

1. Kindergarten
2. Elementary
3. Middle school
4. Junior high
5. Senior high

Q29. What subjects are you teaching this year?

Q30. What is the enrollment of the <u>school</u> in which you do the majority of your teaching? (Circle one)

1. Fewer than 150 students
2. 150 - 249 students
3. 250 - 499 students
4. 500 - 999 students
5. 1,000 - 1,499 students
6. 1,500 - 1,999 students
7. 2,000 or more students

Q31. In what county is your school located?

_____ COUNTY

Q32. What is the zip code for your school?

_____

Q33. Do you work at a non-public or a public school? (Circle one)

1. Non-public
2. Public

Q34. What is the highest level of formal education you have completed for the subject areas you teach? (Circle one)

1. High school
2. Some college or technical school
3. Bachelor's degree
4. Some coursework beyond bachelor's degree
5. Master's degree
6. Some coursework beyond master's degree
7. Ed.D. or Ph.D.
8. Other ===> Please specify:

Q35. Are you female or male? (Circle one)

1. Female
2. Male

Q36. What other suggestions or comments do you have about environmental education?

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Minneapolis, MN 55454-1320

A SURVEY OF MINNESOTA SCHOOL ADMINISTRATORS ABOUT THE ENVIRONMENT AND ENVIRONMENTAL EDUCATION

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A SURVEY OF MINNESOTA SCHOOL ADMINISTRATORS ABOUT THE ENVIRONMENT AND ENVIRONMENTAL EDUCATION

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Please write your answer below the question or circle the number which corresponds to the answer closest to your opinion or your current situation. All individual responses will be kept confidential.

Q1. How well informed are you about the environment? (Circle one)

1. Very informed
2. Somewhat informed
3. Not very informed
4. Not at all informed

Q2. How interested are you in environmental issues? (Circle one)

1. Very interested
2. Somewhat interested
3. Not very interested
4. Not at all interested

Q3. How important is it to include environmental concepts in the following subject areas? (Circle one answer for each item)

	Very Important	Somewhat Important	Not very Important
a. Social studies. . .	1	2	3
b. Music	1	2	3
c. Mathematics	1	2	3
d. Art	1	2	3
e. Reading/English . .	1	2	3
f. Science	1	2	3
g. Physical education.	1	2	3

Q4. Here are some sources from which you might get information on environmental education resources and services. Is each item on the list a major source, a minor source, or not a source of information for you about environmental education resources and services? (Circle one answer for each item)

		Major Source	Minor Source	Not a Source
a.	Your state and local government	1	2	3
b.	The federal government	1	2	3
c.	TV news	1	2	3
d.	TV news magazine shows, such as 60 Minutes or 20/20	1	2	3
e.	Radio	1	2	3
f.	Newspapers	1	2	3
g.	Magazines	1	2	3
h.	Local schools	1	2	3
i.	Environmental groups	1	2	3
j.	Local civic groups	1	2	3
k.	Large corporations	1	2	3
l.	The businesses in your community	1	2	3
m.	Friends and other people	1	2	3
n.	Your children	1	2	3
o.	Educational Cooperative Service Units (ECSU'S)	1	2	3
p.	Science or natural history museums	1	2	3
q.	Zoos	1	2	3
r.	National or state parks	1	2	3
s.	Overnight environmental centers	1	2	3
t.	A nature center that is not located at a national or state park	1	2	3
u.	Other local parks	1	2	3
v.	Other (Please Specify)	1	2	3

_____

Q5. Has an environmental education contact person been appointed for each school building in your district? (Circle one)

1. Yes
2. No

Q6. When you think of environmental education, what do you think of?

Q7. What kinds of training have you had in environmental education? (Circle all that apply)

a. Pre-service (Formal instruction prior to certification)
b. In-service
c. Workshops/seminars
d. Continuing Education classes
e. Personal experience
f. None
g. Other ===> Please specify:

Q8. Over the past 12 months, what types of financial support have been provided for environmental education experiences in your school district? (Circle all that apply and describe all support)

Type of Support		Description of Financial Support
a. Teacher training	===>	
b. Off-site trips	===>	
c. Program development	===>	
d. Curriculum purchase	===>	
e. Equipment	===>	
f. Other	===>	

Q9. Is there a formal, written plan for environmental education in your school district?

1. Yes ===> Please describe:
2. No

Q10. Does your school district have a separate budget line for environmental education activities?

1. Yes
2. No

Q11. Does your school district make budgeting decisions at the building level?

1. Yes
2. No

Q12. Which of the following would allow teachers in your school district to take students off the school grounds for environmental education experiences more often? (Circle all that apply)

a. Information about places to go
b. Time for planning
c. Time for training
d. Administrative support
e. Other teachers being more supportive
f. Parents being more supportive
g. Resolution of liability issues
h. Money for fees
i. Money for transportation
j. Smaller class size
k. More flexibility in scheduling time for students to go
l. Equipment
m. Availability of support resources, such as program materials, staff
n. Having facilities located closer to school
o. Other ==> Please specify:

Q13. Which of the answers in Q12 is the most important?

_____ Please write in one letter

Q14. Which of the following services would prompt teachers in your school district to go off the school grounds for environmental education experiences more often? (Circle all that apply)

a. Hands-on laboratory experiences
b. Field experiences
c. Self-guided tours
d. Access to naturalists
e. Environmental specialist-guided tours
f. Programming and materials
g. Pre/post trip planning materials
h. Provision of equipment
i. Other ===> Please specify:

Q15. What kind of help do teachers in your school district need to do environmental education activities with students? (Circle all that apply)

a. A traveling naturalist/speakers
b. Contact with an environmental specialist in the school
c. Funding and support
d. Training in environmental issues
e. Technical assistance
f. Program development
g. Pre-packaged integrated curriculum models
h. An environmental learning station or kits
i. Assistance with developing an integrated curriculum
j. Other ===> Please specify:

Q16. What do teachers in your school district need <u>most</u> to effectively teach environmental education to students: (1) an environmental <u>resource</u> center where they can get teaching materials, program ideas, training, and other assistance; or (2) an environmental <u>learning</u> center where they can take students for a hands-on environmental experience? (Circle one)

1. An environmental resource center
2. An environmental learning center

Q17. Please briefly describe how the Minnesota Environmental Education act of 1990 has affected your school district.

Please answer the following set of questions about yourself. This information will be used only to categorize people's answers. It will not be used to identify you in any way.

Q18. How many years have you worked as a school administrator?

____ Years

Q19. What is the approximate enrollment of your school district?

_____ Students

Q20. In what county is your school district located?

_____ County

Q21. What is the zip code for your district office?

_____

Q22. Do you work at a non-public or a public school? (Circle one)

1. Non-public
2. Public

Q23. Are you female or male? (Circle one)

1. Female
2. Male

Q24. What is the highest level of education you have completed?
(Circle one)

1. High school
2. Some college or technical school
3. Bachelor's degree
4. Some coursework beyond bachelor's degree
5. Master's degree
6. Some coursework beyond master's degree
7. Ed.D. or Ph.D.
8. Other ===> Please specify:

Q25. What other suggestions or comments do you have about environmental education?

Thank you for your time and your cooperation.

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Minneapolis, MN 55454-1320

8

Section C

Facility Focus Group Results

Facility Focus Group Results
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Appendix

Facility Focus Group Results

I. Background

This section of the environmental education center study presents a narrative overview of the history, roles, characteristics and future of five major types of environmental education facilities. The facility types discussed include: 1) Residential environmental education centers, also known as environmental learning centers (ELCs); 2) Day-use environmental education centers, or nature centers; 3) Private camps; 4) Parks; and, 5) Zoos, museums and special emphasis facilities. The discussion is based on the results of five focus groups conducted in the Spring of 1991.

Public and private members serving on the environmental learning center Technical Advisory Committee assisted DNR staff in identifying, selecting, and recruiting participants for each of the five focus groups. In order to develop accurate information, and to obtain input from environmental education providers, representatives from various environmental education centers were asked to participate. (Please refer to the appendix following this narrative for list of focus group participants.) Participants were sent several general questions for them to consider prior to each focus group meeting. A total of thirty persons took part in the five focus groups which were held in the Spring of 1991.

Note that since focus group members represented various types of environmental education centers, the discussion that follows will not cover all facilities within a specific jurisdiction. For example, the discussion about local parks highlights the experiences of the City of Minneapolis since one member of the parks focus group is familiar with the City of Minneapolis parks efforts. The City of Minneapolis experience is intended to give the reader an idea about the operations of a local park system. It is recommended that the reader not focus on the specifics of a particular park, or environmental education center, but instead should concentrate on the information that flows from the focus group participants' collective experiences.

The views and ideas expressed in the following text are those of focus group participants only and are not necessarily the same views as committee members.

II. Residential Environmental Education Centers, or Environmental Learning Centers (ELCs).

A. Historical Development

Five major residential environmental education centers had their beginnings in the 1960s and 1970s. The history of these residential environmental education centers is closely tied to the commitment and life experiences of the handful of individuals who now run them. The developers of residential centers were all firm believers of field trips and hands-on experiences as providing the essential base of environmental education. The first ideas for this type of facility came on the wave of the early environmental movement, in particular, the first Earth Day of 1970. One central theme pervaded the thinking of that period --that was the recognition of the inseparability of humankind from nature, and society's impacts on nature systems.

Following Earth Day that year, the Minnesota Departments of Education and Natural Resources formed a team of educators. The team's goal was to carry out the First Earth Day's recommendations. This work resulted in one of the first resident field camps for environmental education. The camp, called Bald Eagle Center, was established by Bemidji State University on land leased from the U.S. Forest Service. This facility later became a camp funded by the Title III Job Corps of the federal Comprehensive Employment and Training Act (CETA). Bald Eagle Center is now closed and dismantled.

In the last twenty years, other residential environmental educational centers were established including Wolf Ridge, Audubon Center of the North Woods, Mounds View North Center, Long Lake Conservation Center, and Deep Portage Conservation Reserve. A brief history of each of these pioneer residential centers is discussed below.

Wolf Ridge

Wolf Ridge Environmental Learning Center was created because its first and current director was determined to carry on and expand the initial public environmental education efforts. He was

a member of the Departments of Education and Natural Resources' team of educators. Wolf Ridge opened in 1971 as the Isabella Environmental Learning Center with assistance from state and private monies. In 1980, the center became accredited by the North Central Association of Colleges and Schools. In 1988, the center moved from its outgrown quarters leased from the U.S. Forest Service to a permanent site near Finland, Minnesota. The primary emphasis for the center is on educational programs for youth, although the center offers programs for adults as well.

Audubon Center of the Northwoods

The Audubon Center of the Northwoods located near Sandstone, Minnesota, is operated by the Minnesota Chapters of the National Audubon Society. The National Audubon Society received and accepted a 535-acre bequest in 1968, with the provision that the state Chapters form the managing Board. Subsequently, 80 acres near Finlayson, Minnesota, were transferred to the Audubon Center from the Nature Conservancy. The current head is the first and only director in the center's history. The Center's focus is on environmental education, with particular emphasis on teaching educators, naturalists and college students. Preservation of natural diversity is also an important and major goal for the Audubon Center.

Mounds View North Center

The Mounds View North Center was established in 1977. Before 1977, the Mounds View School District relied on other facilities for teaching environmental education. In 1977, through a collaborative agreement developed with the Department of Natural Resources and the State Camp Board, the district was able to lease land and physical facilities from these two agencies. The purpose was to start an environmental education center operated by the school district, and available to not only Mounds View schools, but to all schools and organizations choosing to come. The district then assigned one of its science teachers as full time director of the center. To a large extent, this situation still prevails today.

Currently, the district still leases the land, but now owns the buildings. The current head staff is an employee of the district, but is permanently assigned to the center. He has the full responsibility of overseeing the center's operations in the delivery of environmental education.

Long Lake Conservation Center

Long Lake Conservation Center was first established in 1963, and began operating in 1965 essentially as a summer youth camp owned by Aitkin County. In 1972, the Center's board decided to convert the site into an overnight and year-round facility.

Deep Portage Conservation Reserve

Deep Portage is the newest environmental learning center in the state. In 1973, the Cass County Commissioners set aside 6,100 acres of land for conservation, resource management education and demonstration. An interpretive center was built on this site in 1979. At that time the center served primarily as a tent camp and day-use facility. Facilities for overnight use were later added. Deep Portage officially started as a residential environmental education center in the summer of 1987.

Other Residential Centers

There was no all-season environmental education center in Minnesota before 1970. The existing facilities were established within the last twenty years. The five facilities described above are the better known. Besides them, there are other residential facilities such as the Northwoods Resource Center, the Forest Resource Center, Heron Lake, the Audubon Center at Kettle River, and the St. Croix Valley Heritage Center located in Wisconsin but serving primarily Minnesota clients. Although the Wilder Forest Center in Stillwater, Minnesota, is a residential facility, its primary mission is not environmental education, but a conference and meeting site. In that sense, Wilder is very different from an environmental education center like Wolf Ridge or Deep Portage.

The main business of residential centers is the overnight and extended-stay experience of nature and the environment. The growth and visibility of residential centers in today's environmental education field can be attributed to their success in marketing and promoting the benefits of the extended duration of the educational experience. The primary mission of residential centers is environmental education. The main target audience of four of the five existing centers is elementary students from grades 4 to 6. The Audubon Center of the North Woods emphasizes college and adult programs. Its programs for grades K to 12 are second in importance.

B. Roles

Residential centers perform many environmental education functions. First, they serve school students. By far the largest groups attending residential facilities are from the elementary schools. Students come with their teachers for an extended visit that can last anywhere from a two-day and one-night event, to a whole week stay. Residential centers also provide pre-service or pre-job field training to environmental science college students. These adults come and spend time at the facilities as interns. Some students are enrolled in specific programs for which they can earn credits for their degrees. Long Lake Conservation Center, Wolf Ridge and Deep Portage are accredited environmental education institutions through the North Central Association of Colleges and Schools, a 19-state association. All five centers discussed in this section of the report have collaborative agreements for credit transfers with colleges and universities. All five ELCs also serve as field trip sites for students at all levels, for teachers and faculty, and other professionals. In the past few years, several ELCs also have begun international programs. The goals of international programs are to develop and implement international internships and to establish formal relationships with other countries and organizations on environmental issues and problems.

The residential centers serve an important role in experimenting and implementing multi-disciplinary environmental teaching. They see themselves in the unique position of helping formal

educational institutions carry out their environmental education mandate. Residential centers have developed innovative methods to incorporate disciplines. They have worked with teachers in several capacities: either to provide them with the professional support, or to develop for them curricula and other instruction materials that meet the educators' needs for learning and teaching outside the school system.

Residential centers play a catalyst role of introducing and facilitating the integration of environmental education into the school system. Their staff perform many functions including land management, administration, teaching, demonstration, development of new learning tools. Also through contracts with federal and state agencies, residential center staff conduct natural resource research. Topics include rare and endangered species management, analysis of deer populations, etc. Residential centers also play a major role in recruiting and training conservation leaders and other professionals in the environmental field. At times, residential facilities have been used as parks or conference and retreat centers. Residential centers also are regularly used as day-use centers by people living in nearby rural areas.

C. Characteristics

According to focus group participants, residential centers are dedicated one hundred percent to environmental education. That is all they do. They also must practice what they preach and teach. The centers stress and offer programs and services for extended hands-on experiences in an outdoor setting. Benefits of a residential and extended stay include social interaction, long-term retention of the skills and experiences gained; concentration on team building, small group work, personal relationships; grass root problem solving; and, development of collective talents. Residential centers are located in unique settings, and as such, they can offer to students opportunities that are different from those available at their schools.

Residential centers provide inexpensive education. Because of low attendance costs, residential centers are accessible to many persons. Because of their affordability, the centers are often

thought to be public facilities although their operations are primarily supported by private funds. The strength of residential centers lies in their grass root support. These facilities exist and thrive because there are segments in the population wanting and willing to pay to support their operations. Another feature of residential centers is their important contribution to the local economy. Of the five centers, at least three are located in economically depressed counties where they are among the largest private employers. As such, they are a major income producer for these localities, bringing in dollars from outside through grants, contributions and service fees. These financial resources are spent locally and thus help improve the local economy.

The geographic concentration of residential environmental education centers in the northeastern and central parts of Minnesota is a limiting factor in terms of their accessibility by the population from the western and southern parts of the state. Another limitation of these facilities is their inability to meet all the demand, the largest of which comes from schools. Currently, some residential centers have a waiting list of up to five years. But this situation exists partly because there are only thirty weeks (September to May) in the academic year that schools send their students to the centers.

There are also at least two other drawbacks to use of residential centers: 1) Transportation logistics; and 2) A small number of minority students served by these facilities. The vast majority of students visiting the centers are from elementary schools. Only about 25 percent of residential centers' overnight schools are at junior and senior levels. Residential centers have not been able to attract large numbers of older students. The lack of secondary students is due in part to high school level students having multiple teachers, many of whom are not committed to providing an residential environmental education experience. Many teachers also are reluctant to take students to the residential centers because of potential discipline problems. Another difficulty for some teachers is their inability to sustain the older students' interest for the environment, given the competition from other higher priority activities, such as sports, jobs, or dating.

D. Future

As environmental education receives greater public attention in the 1990s, residential centers expect increasingly greater demand for their sites and services from all sectors of the population. Center operators call for first upgrading existing centers and then creating more centers to meet growing demand. Focus group participants foresee that at least three more centers will be built, perhaps in the southeastern and western areas of the state. In addition, focus group participants believe a center is needed in an urban setting. Center operators estimate that for the next few years a minimum capital investment of about $17 million into residential facilities will be needed.

This new capital would be used for both upgrading existing centers and building additional ones. Residential centers would continue to be operated as free enterprises to permit flexibility and support innovation, but would receive state financial support, particularly for capital-related development and improvements. The thinking is that such support would occur because government should recognize the validity of residential centers' role as providers of outcome-based environmental education.

Focus group participants contend that schools cannot provide the full spectrum of learning experiences inherent in their environmental education mandate, unless they build into and include in their curriculum, the learning experiences that are offered by the residential centers and other non-school sites. With more and better facilities, the residential centers will be in a better position to develop and meet demand from not only more schools, but also other markets. For example, several existing centers have begun serving two more new groups of clientele: The elderly population and the business sector.

III. Day-Use Environmental Education Centers (Nature Centers)

A. Historical Development

Day-use environmental education centers, more commonly known as nature centers, had their beginning in the early 1960s. These facilities arose from grass roots political and neighborhood planning actions desiring a better quality of life. These actions were spurred by interests among local philanthropists and foundations to donate private parcels of land for preservation and education. The philanthropic community also distributed grant money for the acquisition of land to be used for nature education and recreation. Besides these private initiatives, the federal legislation on land and water conservation (LAWCON) of the mid-1960s resulted in thousands of acres of public land put aside for conservation. The legislation also permitted state bonds to be issued for their development.

The Dodge, Warner and Lowry nature centers were the first to be established in Minnesota. They were followed by many others during the late 1960s, early 1970s, and late 1980s. The steady growth in number and size of these facilities coincided with the healthy economic conditions of the time, and the availability of both land and funds. Increased public interest and awareness of the environmental movement, concern for protecting private property value, and the energy crunch of the mid-1970s, also contributed to the growth of nature centers. Minnesota is one among a few states with a high density of nature centers. Consequently, nature centers provide Minnesotans with many opportunities to learn more about the natural environment.

B. Roles

Nature centers were established to educate and to preserve land for the benefits of the general population, especially youth. Nature centers have the goal of increasing the public's awareness, understanding, enjoyment and stewardship of the natural, cultural and historical resources of their lands. By virtue of being located in areas where people live, nature centers are places

where the local population seeks and goes for appreciation of nature, relaxation, recreation and social interaction without having to pay high fees. People come to their local nature center to learn about natural history, plants, animals, the physical world, the outdoors, conservation, energy, and environmental issues.

Visitors to nature centers are of all ages and abilities, but often the largest number of people attending nature centers are elementary school students. Some nature centers rely on agreements with nearby schools to attract this group of clients. Nature center staff work with school teachers to develop appropriate programming for students of specific grades. Schools use nature centers because these facilities can provide the site, expertise, and the necessary resources and materials for environmental education outside the classroom. Students go to nature centers for a day, or shorter, to get a hands-on learning experience; there, students can learn about the relationships between human beings and the environment in an appropriate context.

Students also learn about lifestyles, and important environmental concepts in a dramatic way. Students are offered opportunities that range from the observation of natural processes to the interpretation of environmental issues. In working with schools, nature center staff assist teachers, but most often play the role of teachers themselves.

Nature centers also serve organized groups of adults, families, and particularly youth. Among youth, clients include scouts, youth clubs, and preschoolers who come for one day or shorter visits. Often, these visits are repeated during the year and over many years. Nature center naturalists provide environmental and natural resources information to visitors. Visitors can also make use of self-guided displays, trail guide sheets and other publications, exhibits, and bookstores that are available on site. Nature centers also serve as information centers for questions from the general public.

C. Characteristics

Nature centers are low fee, accessible and have a wide variety of programs. Because of their proximity to populated areas, nature centers are highly accessible in terms of time and money. Nature centers are open year round, often seven days a week. Being established for day-use, they are inexpensive to operate and use. The low cost and accessibility factors explain the high volume of visitors, many of whom are returning clients. Nature centers depend on users' fees, private donations, and in the case of county or city facilities, on government funds, for their operations.

Clients are nature centers' lifeblood. As patrons, they provide a significant source of income. Users participate in the centers' governance through the election of an advisory or policy board, and have strong and long lasting ties with the centers. Nature centers are part of the local scene. The presence of a nature center in a locality invariably contributes to the area's quality of life.

Nature centers offer a variety of programs to meet every group's need. Because of the high number of repeated visitors, programs must always be upgraded to sustain users' interest. Consequently, staff is constantly challenged to develop new and innovative programming. The people who run nature centers perform multiple roles; at times, they are teachers, coordinators, entrepreneurs; at other times, they are environmental experts, land managers, community consultants.

Nature centers are day-use facilities only. One single short visit, or even a whole day experience, at one of them, may be best seen as a part of the process of lifelong environmental education. Nature centers prefer and work best with returning visitors. Many nature center clients have used their facilities or programs before. Assured of a core group of loyal clients who continue to come back, some nature centers, because of their limited space, staff and resources, do not seek new population groups.

Of great concern to day-use facilities is the issue of over-utilization of their land and infrastructure ultimately causing environmental degradation. More use of the facilities does not

necessarily mean more financial resources, particularly for capital renovation or development. Actually, because nature centers are often perceived as fulfilling a public good, they are limited in their ability to generate additional income through higher users' fees, or grants and donations.

D. Future

Nature centers have already gradually shifted from their early focus on natural history to include a wider view of environmental education. As a result, nature centers believe they are already one of the major vendors of environmental education. The Minnesota Environmental Education Act of 1990 has created greater demand from schools for the use of nature centers' sites, educational programs and staff expertise. Nature centers expect to serve more students from all levels: Elementary, junior, high school and college. Nature centers hope to accomplish this by developing and negotiating more service contract agreements with the schools. Nature centers know schools do not always have the land base, knowledgeable expertise, or staff to fulfill environmental education mandates. The nature centers offer a partnership with schools to fulfill those mandates.

As the awareness of, and interest for the environment continues to grow, nature centers are also gearing for welcoming more adult groups who seek guidance and training on specific environmental issues. But as nature centers prepare for a larger role as environmental education providers, questions concerning the need for facility accreditation and improvement, and the need for instructional staff certification and operational support, are beginning to surface.

There is concern and uncertainty among nature center operators on how to address the issue of program certification. Some centers use certification programs of closely related professions, but no consensus among nature centers exits. Of greater concern is the question of how to encourage junior and senior high students to visit a natural site as part of their earth science curricula. Interest in nature centers among secondary school populations is rising, but cuts in transportation funds limit schools' ability to transport students to nature center sites.

IV. Private Camps

A. Historical Development

The history of private camps in Minnesota dates back to the early 1900s. In 1910 Boy Scouts of America purchased lands in Minneapolis to establish the first private scouting camps. This early private and philanthropic initiative was continued by other social service and religious organizations, such as the Campfire Girls' Council establishing camps for girls, and the Young Men Christian Association (YMCA) building camps to provide outdoor opportunities to children living in cities. Another facility, Camp Courage, was started to serve post-polio children.

Religious camps began some fifty or sixty years ago. Congregations bought lands and set up camps to serve their members, primarily to teach and promote religious and spiritual development in children, youth and adults.

Most private camps began as summer camps, although the two types of facilities started at different times. Summer camps were intended to provide young people educational outdoor opportunities as a way to help their character building and personal development. What children learned at summer camps varied depending which camps they attended. Boy Scout camps, for instance, typically focused on teaching outdoor skills. An important tenet of the Campfire Girls is the love of nature. Lutheran and Presbyterian camps emphasized religious or spiritual development.

Beginning in the mid-1970s, partly as a result of the environmental movement, private camps began to broaden their purpose, and thus, also their operations. In addition to the traditional camping experiences, many camps began to include environmental ethics in their programs. From that time on, especially since the mid-1980s, several important changes have taken place for private camps. First, the focus of many camps extends beyond summer visits. Camps now operate all year as retreat, conference, and environmental education centers. Both day-use and residential programs may be available.

During retreat programs, the camp functions as a rental facility which provides primarily meals, lodging, and site usage. The rental groups plan much of the programming. These programs are most successful on weekends. Week day usage, however, still remains low for many camps. With low week day usage, and a growing environmental education component added to their regular programs, many camps are seeking to offer environmental curricula to schools as a way to generate extra income. Several Minnesota camps including Camp Courage, Camp Widjiwagan, Camp St. Croix, and others have developed strong environmental programs already. In so doing, camps no longer serve exclusively their traditional clients who are members of their parent organizations.

B. Roles

Private camps continue to be the major providers of the summer camping experiences. But changed by the need to be more cost effective, the private camps also now offer themselves as residential facilities, catering to schools and groups who desire a residential component to their environmental education programs. Some camps have learned they can benefit financially by picking up demand not served by residential environmental learning centers which often have waiting lists. Many schools readily turn to camps for their services because of their low cost and quality.

C. Characteristics

Private camps are generally located in beautiful outdoor settings, prime natural areas with pristine woods, and always a lake or river nearby. Because camps are operated as private enterprises, they can target user groups and focus on their specific needs. Camps have staff skilled and experienced working with youth. Camps have a loyal client base who have a sense of ownership of the facilities. Camps are dispersed throughout the state. There is practically a camp in every area or region. Many camps are of high quality in terms of their facilities and programs, and have accreditation of the American Camping Association.

As with some other facilities, camps deliver a public good, but depend on private charity and fees to stay in business. Most of their private grants and contributions are for the support of core programs. Thus, camps are under pressure to offer primarily programs that are self-sustaining. Many camps find that their staff's responsibilities are stretched between several program areas: Summer activities, group retreats, environmental education, etc.

Today, in most camps, environmental education is offered to some degree as a component of the camp's basic program. A relative minority of camps offer environmental programs to schools. Most do not. Some camps have environmental education coordinator positions. The majority do not. How environmental education is taught, the degree to which it is taught, and the exact programs offered varies considerably from camp to camp. At present, there is no form of accountability, no system of standards or evaluations, for school targeted environmental education programs at private camps.

D. Future

Camp missions will always remain loyal to their summer constituents. But with growing public focus on environmental issues, camps will increasingly focus on the teaching of environmental issues to carry out their missions. Camps foresee broadening their client base to serve other segments of the population, besides children; camps are trying to market themselves to families, older people, and nursing home residents. Although residential environmental learning centers are leaders in the environmental education field, camps see themselves as having tremendous potential to complement and augment the role played by the residential environmental learning centers.

Camps are confident that they have the necessary sites and facilities, and strong experience working with youth. Camps are anxious to become major providers of environmental education. More and more camps are including plans for environmental education school programs in their long range plans. Lack of money, qualified staff, and knowledge are barriers for many camps to offer environmental education programs to schools.

Camp sites and facilities are waiting to be used. The future of environmental education at private camps will depend largely on the camps' ability to gain the necessary resources to establish quality self-sustaining programs.

V. Parks

A. Historical Development in Environmental Education

1. Local Parks

The Minneapolis Park Board began to look at environmental education in late 1969 as a result of the environmental movement of that period. In 1980, the Minneapolis Parks Board developed a set of four basic services, environmental education being one of them. Today this set of basic services forms a basis for the Minneapolis Parks and Recreation Department's activities.

2. Regional Parks

The Hennepin County Park Reserve District (now known as Hennepin Parks) was created in 1957. Its primary mission was to develop and protect the region's natural resources. In 1969, through the efforts of the Metropolitan Nature Center Foundation, Lowry Nature Center was established as one of the first two nature centers in the state. Hennepin Parks now operate three nature centers and also conduct environmental education programs at recreation centers, beaches, campgrounds, and picnic areas.

3. State Parks

The first environmental education programs in state parks were initiated in 1960-1965 with funding from the University of Minnesota and the Bell Museum. Minnesota statutes clearly state that state parks serve an environmental education role in addition to their role of

preserving natural features. About $1.3 million of the state park budget is devoted to environmental education.

4. National Parks

The first national park, Yellowstone, was established in 1916. From the beginning, national parks had nature guides to assist visitors in the appreciation and interpretation of parks' natural resources. It was not until 1970, however, that the focus changed to environmental education.

Since then, there have been several national park environmental education programs, but the performance of these programs has not met initial expectations, due to lack of planning, public input and consultation with educators and teachers. For example, the role of park staff, which had been primarily managing and maintaining facilities, rapidly changed to include work as nature interpreters without the benefit of proper training.

In the mid 1970s, the national park service contracted with a private company specializing in school textbook development, and was able to create instructional materials and texts for use by visitors to national parks. But even to this date, not all federal parks are providing formal environmental education.

B. Roles

Parks at all four levels -- local, regional, state and national -- have an environmental purpose, but recreation, enjoyment and enrichment of people's lives are important components of park missions as well. Today, many parks no longer provide just informal teaching based on nature guides, rather parks are moving toward a more formal environmental education program to respond to the needs of the population they want to attract. Parks have a hierarchy that drives their programs. Local parks tend to have broad programming, national parks tend to have more focused programming.

Minneapolis parks work to provide opportunities for development of social, life, and environmental skills to promote the wellness and health of the city's residents. The majority of these people live in the immediate neighborhood; for local residents the local park is an extension of their yards. It is also the neighborhood's sports ground. In fact, some city parks serve mostly as baseball, soccer or football fields.

Regional parks, in contrast, are intended to provide opportunities for self-directed recreation in outdoor setting. Visitors to these facilities are residents of the county and other neighboring areas. They come to regional parks expecting an element of environmental education programming. Many regional parks also have strong connections with schools. These parks provide the student population both the sites and resources for outdoor learning. In many cases, these schools have a strong interest in local environmental issues. Hennepin Parks provide environmental learning opportunities through active, leader-led programs, as well as through passive experiences.

State parks' play a role in teaching residents about Minnesota's natural and cultural story. State parks are mandated to provide opportunities for environmental education to all citizens of the state. Because of their fine natural features, and proximity to all citizens (a state park is within 50 miles of every citizen), state parks occupy a unique niche in the overall system of environmental educational services. State park interpretive programs serve elementary and high schools, colleges, and adult education. State parks also regularly organize workshops on park resources and out-of-doors teaching methods for teachers. State parks are some of the best places for families to recreate and learn.

National parks have two primary roles, environmental interpretation and environmental education, in addition to protection of outstanding natural, historical, and cultural features. On the whole, national parks have been better at interpretation than education.

It appears that environmental education has been more successful at state, regional, and local park levels, but parks at all levels are expanding their environmental education efforts.

C. Characteristics

National parks stand out for their singular geographic and geologic features. They are located in prime recreational areas with unique historical and cultural attractions. Visitors come to national parks for either just a day, or longer stays of a couple of days to weeks, and even months.

Many state parks share the same outstanding features of their national counterparts. They have singular features, and high quality natural, historic, cultural and recreational resources. Visitors come for a day, or stay overnight camping, extending this experience for days, even weeks. Most state parks have on-site staff, and depending on the park, a variety of programming and services.

County and municipal parks have high accessibility because they are located near population areas. County and local parks also have high repeated usage. They serve a very diverse clientele, especially in the case of local urban parks which serve more minorities than other types of parks. Municipal parks are numerous, conveniently located, and open to the public free of charge.

D. Future

Providing environmental education to a diverse population constitute a great challenge for park and recreation professionals. They recognize parks have a role to play. Park professionals believe they have the infrastructure in place, and the programming experience to offer environmental education. Parks anticipate many challenges. These challenges include: 1) Finding more effective ways to work with larger numbers of people as response for environmental education programs grows; 2) Promoting ways of reinforcing formal environmental instruction and incorporating environmental awareness into individuals' lifestyles; and, 3) Making environmental education relevant to minorities and other under-served populations.

VI. Zoos, Museums & Special Emphasis Facilities

A. *Historical Development*

1. Museums

Museums, with their dedication to the curation, study, and interpretation of collections, have existed for centuries. In Minnesota, the Science Museum of Minnesota was conceived in 1907 when a group of St. Paul businessmen met to discuss the "intellectual and scientific growth" of the city. In its early days, the focus of the St. Paul Institute of Sciences and Letters, eventually Science Museum of Minnesota, was in natural and applied sciences. The museum later expanded its focus to cover natural history, physical and social sciences, and technology.

The museum's natural history exhibits have long contained messages for conservation, but a milestone in the museum's environmental education efforts was the "Wolves and Humans" exhibition in 1983. The Museum now has several major, long-term environmental education projects, and environmental education has been incorporated into the museum's new five-year plan.

The Bell Museum was created by a legislative mandate in 1885. The museum's initial purpose was to document the history of Minnesota and educate the public. The Bell Museum which is within the University of Minnesota was originally part of the Minnesota Geological Survey. In the 1960s it expanded to assume a role in public education. In 1965, it became a partner with Warner Nature Center to provide University undergraduates and the general public with nature and natural resource educational opportunities.

2. Zoos

Zoos are centuries old. Many started as private collections of animals owned and kept by royalties for their entertainment values. The collections later were open to the public for

recreational and educational purposes. The intent was to offer the general population an opportunity to observe the exotic.

Today, zoos have multiple functions. The zoos' recreational and educational roles still continue, but there is an increased emphasis, especially in large zoos, to engage in conservation and research activities, and to educate the public about these activities.

Interest in research and conservation began in the 1970s and 1980s. It was spurred by concerns for animal extinction, small gene pools of captive animals, and endangered species. Conservation and environmental education, became the focus of the Minnesota Zoo in 1986. Zoos use their recreational appeal to bring people to their facilities, and while people are on site, to teach them about the environment. Thus a visit to a zoo is both entertainment and education.

The Minnesota Zoo is the largest in the state. In addition, there are also the Lake Superior Zoo in Duluth and the Como Park Zoo in St. Paul. Like the Minnesota Zoo, the Lake Superior facility is very much involved with educational and conservation efforts. Through its organization of volunteers known as Docents, the Lake Superior Zoo has provided thousands of hours of educational programs either on site or outside the zoo throughout Northern Minnesota. Thousands of school children visit the Lake Superior Zoo in the spring on educational outings. This facility is also a tourist attraction in the northern part of the state, and many visitors are from the metro area.

The Como Park Zoo in St. Paul offers a variety of free exhibits for residents and tourists alike to view. The Como Zoo is unique in that it is located in a major St. Paul Park area. Residents can see a zoo exhibit, take part in a family reunion, play baseball, or bike around a lake, all in a single outing.

3. Special Emphasis Facilities

Besides museums and zoos, some 26,000 specialty entities across the nation also play specific environmental education roles. In Minnesota, these specialty facilities include, for example, the Raptor Center, the Wildlife Rehabilitation Center, and the University of Minnesota's Veterinary School.

Many of the facilities are closely associated with universities for research purposes. The Raptor Center, for example, was founded in 1972 by Dr. Duke, a researcher and expert in bird gastrointestinal studies. The Raptor Center is one of the first in the nation. The Center is primarily supported by private foundations and its membership. The center's mission focuses on the rehabilitation of birds of prey. Education, and in particular scientific education, has always been part of the center's purpose.

Increasingly, however, the Raptor Center is focusing on environmental education. In the last six to seven years, it has worked with many schools providing environmental education in the classroom through their trained volunteers. Today the center, besides taking programs to schools, also offers environmental education programs on site.

B. Roles

The Science Museum of Minnesota has developed a variety of environmental education products that include school assembly and residency programs, museum trunks, sciences slices, science-by-mail, theater presentations, demonstrations, laboratory activities, and exhibits. Over 800,000 people visit the museum each year to see exhibits and Omni films, take classes, and participate in teacher enrichment programs. In addition, the museum's school outreach program reaches nearly 130,000 students and teachers each year through programs and teacher in-services delivered directly to schools throughout the state.

Zoos also occupy an important place in environmental education. For example, education about nature has always been a part of

the Minnesota Zoo's mandate since its opening in 1978. Through its conservation education programs, the Minnesota Zoo brings students of all grades to its site for environmental education. Through its educational programs, the Minnesota Zoo also trains teachers, holds special event days, such as Earth Day, recruits mentors, young scholars and interns.

In addition, the Minnesota Zoo provides workshops, summer camps, speaker bureaus and volunteer assistance education programs. The Minnesota Zoo receives over 1.1 million visitors annually. The Minnesota Zoo reached 107,000 students with its on-site programs, and almost 55,000 students with its off-site presentations. Over 3,500 people annually attended the zoo's continuing education programs. This year, the Zoo added an international environmental education program with the goal of providing educational training and technical assistance to third world countries on environmental issues.

The Minnesota Raptor Center has a very specific role. Its primary business is the rehabilitation of prey birds for the ultimate purpose of promoting stewardship of the environment and natural resources. Increasingly, the center is working with schools, taking permanently disabled birds to classrooms to demonstrate impacts of human actions on wildlife.

C. Characteristics

Although museums, zoos, and specialty facilities differ from each other, each type of facility shares some common themes. All deal with nature, and all rely on education to carry out their mission. All are engaged in research. Their target clientele includes both the general population and school students. Museums portray the natural world through fossils, preserved organisms, and simulated habitats, while zoos, and specialty facilities like the Raptor Center work with living organisms. Zoos, and to a certain degree, facilities such as the Raptor Center, use their unique recreational appeal to attract audience, and capitalize on their attendance to achieve educational goals. Both the Science Museum and the Minnesota Zoo are major state tourist attractions, and therefore, enjoy year round high volume of visitors representing diverse backgrounds and ages.

Zoos and museums are committed to environmental education. The learning experiences that they provide, however, often are limited by the fact that visits tend to be relatively short, and visitor experiences generally are not intensive. These facilities, therefore, seek to raise their audience's awareness and curiosity rather than to provide an in-depth understanding of issues and topics.

Zoos and museums constantly are also experimenting with new interpretive methods, and are interested in working with the media to deliver environmental education. In spite of its location in the metro area, the Minnesota Zoo is still perceived by many people as being too far away. In the case of the Bell museum, its role in environmental education is often perceived as peripheral.

For zoos, museums and special emphasis facilities, environmental education issues are so large that they cannot be thoroughly addressed during a typical visit. The other difficulty they face, is the constant need to change and offer new and fresh exhibits to attract and bring back visitors. Space is also a major problem that all experience. The Minnesota Zoo does not have overnight facilities for visitors from greater Minnesota. But both museums and zoos have a clear advantage that many other facilities do not -- their capacity to reach and attract large volumes of people. Zoos and museums are an essential part of the general population's leisure and educational lives. This provides zoos and museums with much opportunity to bring their audience the environmental education messages.

D. Future

Zoos, museums and special emphasis facilities view the years ahead as an opportune time for recognition of their educational role. These facilities believe schools will need their involvement and support to teach environmental education. Zoos, museums and special emphasis facilities are willing and have the capacity to help teachers fulfill their mandate of teaching environmental education. To do this well, zoos and museums recognize the need for networking and cooperation. These facilities will have to share

information and resources. They want to look at different and better ways of doing business.

For example, zoos and museums want to expand the definition of their exhibits to get visitors involved, and thus have them spending more time on site. Exhibits will have to be more interactive to permit people to experiment, rather than just to see and touch. Zoos and museums will need to develop post-visit opportunities to reinforce and sustain environmental education messages. These facilities will also have to link exhibits with other educational opportunities and organizations. As facilities that offer environmental education, zoos, museums and special emphasis facilities want to practice what they teach and operate in a manner that is respectful of the environment. They will continue to have exhibits of animals and objects. These are used as stimuli to hold visitors' attention and to achieving greater environmental awareness among visitors.

Zoos, museums and specialty facilities are very conscious about reaching out to larger and wider audiences, particularly minorities and groups from diverse backgrounds and cultures as well as those in remote locations. Zoos, museums and special emphasis facilities will continue to offer educational programs for schools. Programs will be expanded to serve school students in higher level grades, and the growing aging population as well as private travel groups.

APPENDIX

Environmental Learning Center Study
FOCUS GROUP PARTICIPANTS

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3) Private Camps: (6)

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Mr. Kevin Hall	Camp Omega R. Rte 2, Box 117 B, Waterville, MN 56096
Ms. Yvonne Anderson	YMCA Camp Kici-Yapa YMCA Southdale, 7355 York Ave. So. Edina, MN 55431
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Mr. Mark Cleveland	Fort Snelling State Park Hwy 5 & Post Road St. Paul, MN 55111 4) Zoos, Museums &

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Ms. Julenne Boe	Lake Superior Zoo 7210 Fremont St, Duluth, MN 55807
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Section D

Environmental Education Center

Inventory Data

Environmental Education Centers: Inventory Data

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ENVIRONMENTAL EDUCATION CENTERS: INVENTORY DATA

I. Background & Inventory Rationale

An inventory of environmental education centers was conducted as a part of a data generation process for the LCMR-sponsored Environmental Education Center Study. A thirty member technical advisory committee representing environmental education centers (residential, day-use, park, and specialty facilities), the public, and state agencies developed census questions. The questions were designed to obtain information on: 1) Facility location and size; 2) Mission; 3) Educational emphasis; 4) Staffing; 5) Capital costs; 6) Fees and clientele; and, 7) Center focus on various environmental topics.

Unlike the data from the Minnesota Center for Survey Research, the inventory data are not compiled using a statistical analysis package. The design of the survey precluded this option. The inventory questionnaire was designed to identify and examine a variety of environmental education centers. The inventory, sent to over 250 facilities, was not designed to provide complete information on every environmental education facility in Minnesota, although the inventory is thought to be one of the most comprehensive listings of environmental education facilities available. (Almost 180 respondents representing existing or proposed facilities/project returned the survey.)

II. Use of the Data

Given the inventory design, there are several points about the inventory to consider. For example, no aggregate response rate can be calculated. Surveys were sent to facilities which were thought to be environmental education centers--the 'population' of environmental education centers was not defined prior to the census. Some of the respondents indicated they are not environmental education centers, others did not return the survey.

Furthermore, some facilities are difficult to characterize. For example while there are 66 state parks, some have interpretive facilities and naturalist staff, some state parks have no facilities, and others fit somewhere in between. One could argue that each park be considered a separate environmental education facility, others could contend that DNR state parks as a whole should be considered one provider. Some

regional parks contain day-use nature centers, while others provide only physical grounds for teachers to use. Yet at each, environmental education may take place.

It is also difficult to compare responses among facilities. Some inventories were returned partially filled-out; some were returned with a note indicating that only a small fraction of their activities are devoted to environmental education. Still others indicated their corporate offices are in Minnesota with facility/operations in Wisconsin further complicating analysis decisions.

In other cases, a respondent may indicate that a facility is open for three months and devotes 50 percent of its facility time to environmental education; another center may be open twelve months and devote 8 percent of its time to environmental education. Yet another facility may serve ten times the clientele as the first two facilities. The difficulty in trying to compare responses between facilities and types of facilities or groups of responses among facilities should not be underestimated.

Many who responded to the survey requested that the data remain confidential. Accordingly, the data are discussed in a generic manner. In addition, since the survey was not designed to be compiled in a statistical manner, the discussion is primarily in a narrative descriptive format. The reader should look less at the numerical data in the report and more at what makes each category of facility unique.

To facilitate comparison between types of facilities, data were placed into categories where appropriate. For example, one part of the inventory lists 16 educational areas that an educational center could emphasize. These sixteen areas were grouped into five composite categories: 1) Environmental education, 2) recreation, 3) social, 4) religious, and 5) other. These categories will be used in comparing day-use facilities, for example, with residential facilities.

III. What the Inventory Tells Us

The inventory provides much information on the types of environmental education centers operating in the state. The type of facilities represented by inventories particularly show that there are a wide variety of facilities offering environmental education opportunities in Minnesota. This report divides Minnesota environmental education centers into six major categories:

1) Residential Centers

2) Day-Use Nature Centers

3) Parks (national, state, county, regional, and city)

4) Federal facilities

5) Museums, Zoos, and Special Emphasis Facilities

6) Proposed Facilities and Projects

The report describes the responses received for each of these six types of facilities. Note that while it is believed that the categories and forthcoming discussion adequately depict existing facilities, the numbers and types of facilities discussed are not meant to be inclusive. For example, in the parks section, discussion of county and local parks centers on Minneapolis/St. Paul metro area parks because the information on metro parks was most easily obtainable. The discussion of metro parks, therefore, also must represent county and local parks in outstate Minnesota. The size and scope of this study are too small to discuss and categorize every regional, county, and local park in Minnesota. Instead, the discussion is intended to give the reader an understanding of the types of activities and services generally offered by local and county parks.

Finally, a comment on the inventory data in the context of how environmental education is conducted across Minnesota is necessary. There are many other types of facilities which serve as additional sites for environmental education, but are not discussed in this report. Examples include: waste treatment plants, power generation facilities, industrial mills, mining sites, hydroelectric sites, recycling centers, etc. While these facilities were not designed as environmental education centers, environmental education of students and adults can be an important function of these facilities.

Environmental education takes many forms and levels and occurs in many places across Minnesota. Neither schools, day-use centers, parks, museums, zoos, community colleges, or residential centers plays a sole or majority role in educating students--though the role of each is significant and integral to high quality environmental education of Minnesota's students and adults alike. The existing combination of day use, residential, museums, park interpretive centers, zoos, and other

special purpose facilities provides a rich source of high quality environmental education opportunities. When reviewing the data consider the niches held by each type of facility.

IV. Residential Environmental Education Centers

Residential environmental education centers include a variety of facilities including those devoted to teaching K-12 children, facilities focused on the disabled, and seasonal camps, many of which are expanding their programs to meet user needs on an annual basis.

The differences among facility type vary considerably. Survey results with respect to residential environmental education centers are therefore not easily categorized. For example, some camps operate large year-round environmental programs in addition to their summer youth programs; others are planning to expand their environmental education efforts. Some have built specific facilities devoted primarily to environmental education.

Other residential centers have primary missions which are not focused on environmental education, but use environmental education as a means of achieving that mission. Still others use environmental education as a theme to enhance religious experiences or retreats.

For the purposes of discussion and comparison of data, residential environmental education centers are divided into four categories: 1) Centers with environmental education as a primary mission; 2) Centers which emphasize environmental education in addition to other activities; 3) Camps (those facilities which historically appear to have served seasonal clients, many of which are now serving clients on a year-round basis); and 4) Other residential facilities (e.g. facilities which do not easily fit into the three categories above). Proposed or newly established facilities such as Kettle River ELC, and the Forest Resource Center in Lanesboro are discussed in Part VI. Proposed Facilities of this section (p.40).

A. *Residential Centers with Environmental Education as a Primary Mission*

1. Background

Five residential environmental education centers whose mission is considered to be primarily environmental education are discussed. The centers are: 1) Deep Portage Conservation Reserve; 2) Wolf Ridge Environmental Learning Center; 3) Mounds View North Environmental Learning Center; 4) Audubon Center of the North Woods; and, 5) Long Lake Conservation Center.

These five facilities are currently considered to be the largest residential centers in the state with a primary focus on environmental education. The discussion that follows proceeds in order of the questions contained in the census inventory.

2. Center Mission and Operations

Respondents were asked if environmental education is a significant objective of their facility based on the goals of the 1990 Minnesota Environmental Education Act. All respondents answered 'yes'. Percentages of each facility's time and effort devoted to environmental education ranged from 95 to 100 percent.

Residential centers were asked what areas of education they emphasize. All five facilities emphasize environmental education and recreation, and to a lesser degree, social education.

3. Facility Operating Times & Plans for Development

Respondents indicated that their centers were operating between 266 and 365 days during 1990 to provide environmental instruction. All residential centers are open during the school year.

Respondents were asked about the operational status of their facilities. All five facilities are fully operational and have plans for further development.

4. Staffing

Respondents were asked how many Full Time Equivalents (FTE's) of effort were specifically devoted to environmental education during calendar year 1990. Staff at these facilities vary from just under four to 35 Full-Time Equivalents. Respondents generally have twice as many full-time positions as part-time or seasonal and rely minimally on volunteers or interns. Teaching takes the majority of FTE's in each type of position; less staff time is devoted to curriculum development.

5. Annual Operating Budgets & Replacement Costs

Annual operating budgets for the five facilities range from $145,000 to $1,250,000. The five facilities devote 95 to 100 percent of their budget to environmental education.

The inventory survey also asked for facility replacement costs. Replacement costs range from $1.4 million to $5.5 million. The age of facilities range from 1900 to 1991 with most of the acquisition and building taking place between the mid 60s and 1990.

6. Fee Schedules

Respondents were asked to describe fee schedules on a per person, daily or weekly basis for environmental education programs and services (food, lodging, and miscellaneous expenses were also included if applicable).

Respondents indicated that approximate costs range from $14.10 to $53.00 (for one overnight with meals) to $225.00 for conservation leadership school (including meals, lodging, supervision and tuition). Other independent charges included those for interpretive programs ($3.00 per person/$5.00 per family.

7. Center Physical Capacity

Respondents were asked about the total physical capacity for each of the following facilities:

Classrooms/indoor teaching areas:

* 100% (5) of this group have classrooms.
* Designed capacity: 100 - 270 people.
* Largest group size: 120 - 350 people.
* Three ELCs out of the five have handicapped accessible classrooms, one does not, and one did not answer.

Food service facilities:

* 100% (5) of this group have food service areas.
* Designed capacity: 85 - 250 people.
* Largest group size: 145 - 280 people.
* Two ELCs out of the five have handicapped accessible food service areas, two do not, and one did not answer.

Indoor lodging:

* 100% (5) of this group have indoor lodging.
* Designed capacity: 90 - 220 people.
* Largest group size: 105 -280 people.
* Two ELC's of five have handicapped accessible indoor lodging, one does not, and two did not answer.

Other sheltered teaching areas:

* 40% (2) of this group have other sheltered teaching areas
* Designed capacity: 20 - 170 people.
* Largest group size: 200 people.
* Neither ELC answered whether its sheltered teaching area is handicapped.

Note: For all types of facilities, respondents listed the largest group as being greater than the capacity of the facility. In addition, one ELC also listed an administrative building and an energy center as a part of its infrastructure.

Respondents were also asked what other types of facilities were available at the learning center and whether those facilities were handicapped accessible. The residential centers offer a variety of

other types of facilities. All offer nature trails and a majority offer laboratories, camping, canteens, interpretive exhibit areas, and libraries. None offer a chapel. Some of these additional facilities are handicapped accessible, some are not.

8. Type of Habitat & Equipment Offered

Respondents were asked the habitat types available at their center for environmental instruction. All residential centers offer wetlands, forests, and lakes/rivers/streams. Only one of the five offers either a prairie or cropland/orchard habitats.

All residential centers offer laboratory equipment, field research supplies, and snowshoes for student use. A majority offer audio/visual equipment. Two offer use of computers.

9. Clientele

Respondents were asked the estimated number of people who visited their facility. The estimates range from 3,400 to 13,500 people. One estimate did not include walk-ins. It is unknown whether other estimates include walk-ins. Each of the five facilities keeps formal records regarding visitor use.

Respondents were asked about how the visitors used the grounds. Most participated in environmental education programs or used center services.

The five residential centers were asked if they had to turn away prospective students or other visitors for any reason. All (100%) checked 'yes'. Reasons for turning away students include facilities being booked to capacity and scheduling conflicts.

Respondents also discussed several visitor categories who participated in center programs or services. Not surprisingly, a majority of the center's clientele are K-12 students followed by post-secondary groups, and pre K-12 school groups.

For four of the five residential centers, between 83 percent and 99 percent of their visitors are state residents. Very few visitors are non-U.S. citizens. For three of five residential centers, between 85 and 90 percent of their visitors traveled 100 miles or more.

Estimated length of stay among visitors ranged from 48 - 144 (hours/visit).

10. Effectiveness of Program & Instruction

Respondents were asked how they ensure that their environmental education program matches the needs of the state's formal K-12, Post-Secondary, and Adult education system. All five centers use staff review or self-examination, as well as teacher evaluations. A majority of centers use formal review and accreditation and informal peer consultation & review.

All respondents monitor and evaluate the effectiveness of programs and instruction through teacher evaluations, client feedback, and repeat visits. A majority of centers also use peer review and monitoring.

Finally, respondents were asked how often sixteen environmental topics are addressed by one or more of their center's curriculum offerings. These data are not compiled and analyzed. Because the percentages of time and effort devoted to environmental education varies considerably among facilities, comparisons among curriculum offering are likely to be inaccurate. Whether topics are offered as a part of the curriculum may not be important depending on the percentage of the curriculum devoted to environmental education.

For example while one facility may 'always' include ecosystem concepts as a part of its curriculum offerings, if that topic is offered only once a year, visitors may not hear much about ecosystems. In contrast, another facility may offer an ecosystem component 'sometimes' in curriculum offerings, but present those on a monthly basis; in this case many visitors may hear about ecosystem concepts. One center's interpretation of the meaning of 'frequently', 'always' or 'sometimes' may differ from another center's view. No condition of time (e.g., 'frequently' corresponds only to those subjects offered more than twice a week) was specified for each possible response.

The data relating to environmental topics offered are not compiled for other categories of facilities discussed in this inventory as well.

B. Residential Centers which Emphasize Environmental Education in Addition to Other Activities

1. Background

Nine residential centers whose primary mission includes activities in addition to environmental education (e.g., religious training, services for the disabled, etc.) include; 1) Vinland Center; 2) Wilder Forest; 3) Northwoods Resource Center; 4) Confidence Learning Center (CLC); 5) Lake Carlos Environmental Center at Luther Crest; 6) Green Lake Bible Camp; 7) Camp Courage; 8) Camp Ojiketa & Camp Cheewin; and 9) Wilderness Canoe Base.

Vinland Center and Confidence Learning Center offer therapeutic and rehabilitation services respectively as a primary mission. Camp Courage seeks to enhance and improve the lives of physically and sensory disabled individuals through both therapy and rehabilitation. Wilder Forest offers a variety of services, some of which include meeting places for non-profit organizations. Religious training is an important part of the mission of Lake Carlos Environmental Center, Green Lake Bible Camp, and Wilderness Canoe Base. Wilderness Canoe Base, Camp Ojiketa/Camp Cheewin, and North Woods Resource Center emphasize outdoor education and wilderness skills.

The diversity of missions for these facilities illustrate that environmental education occurs at a wide variety of facilities, many of which are difficult to categorize.

2. Center Mission and Operations

All respondents indicated that environmental education is a significant objective based on the goals of the 1990 Minnesota Environmental Education Act.. Responses for amount of time devoted to environmental education vary from 5 to 100 percent. Five of the nine facilities devoted forty percent or more of their time to environmental education. A majority of the facilities emphasize social, and recreational education as well. Three centers offer religious training.

3. Facility Operating Times & Plans for Development

Respondents indicated that their centers are open from 210 to 365 days out of the year. Five of the nine centers are open every month for environmental education activities. Two centers are open every month except for June, July, and August; another is open all months except for June, July, August, and December. Another center is open all year except for August and November. Respondents were also asked about the operational status of their facilities. All nine centers are fully operational and have plans for further development. A portion of the North Woods Resource Center is partially operational with plans for further development.

4. Staffing, Budgets & Fee Schedules

The number of staff assisting with environmental education at the facilities vary from .6 Full Time Equivalents (FTEs) to 21 FTEs. Annual budgets range from $216,000 to $1,500,000. Seven of the nine budgets are over $300,000. The percentage of the budget devoted to environmental education ranges from 5 to 90 percent. For the facility with a $1,500,000 budget approximately $300,000 is spent on environmental education. For the facility with the $216,000 budget, the amount spent on environmental education is approximately $97,200.

Respondents were asked to describe their fee schedules on a per person daily or weekly basis for environmental education programs and services. Respondents were also asked to include food, lodging, and miscellaneous expenses where applicable. Respondents' answers were varied.

For example, one respondent indicated that environmental education fee costs are not separate from other program costs at the center. Another center operates free of charge and relies on funding and donations (estimated cost is $52.00 per day). For others, fees range from $2.00 - $8.25 per day without lodging. Cost for a week at one center with room and board is $86.00. An overnight stay at another center costs $22.00 - $44.00 including room and board.

5. Center Physical Capacity

Respondents were asked about the total physical capacity for each of the following types of facilities:

Classrooms/indoor teaching areas:

* 88.9% (8) of this group have classrooms. All of the eight centers have classrooms that are accessible to physically disabled; one has an additional classroom that is not accessible.

Food service facilities:

* 88.9% (8) of this group have food service facilities. All eight have food service facilities that are accessible to physically disabled; and one has an area that is not accessible.

Indoor lodging:

* 88.9% (8) of this group have indoor lodging. All eight of these facilities have indoor lodging that is accessible to physically disabled; three of the eight facilities also have areas that are not accessible.

Other sheltered teaching areas:

* 88.9% (8) of this group have other sheltered teaching areas. Seven of the eight facilities have sheltered teaching areas accessible to physically disabled, two also have areas that are not accessible.

Respondents were also asked about other available facilities. A majority offer camping, craft centers, interpretive exhibit areas, library, nature trails, and restrooms. None offer computers, although one facility plans on installing them in the future. Some of these additional facilities are handicapped accessible, some are not. 'Other' facilities listed include: Pool, gym, educational farm, and a boating/beach area.

6. Type of Habitat & Equipment Offered

All nine facilities offer wetland, forest, and lakes/rivers/streams habitat types. A majority offer old field/meadows, and landscaped habitats. The habitat types are similar to those located at residential centers whose primary mission is environmental education. The habitat types available are primarily those found in the forested regions of Minnesota.

With respect to equipment, the majority of centers offer audio/visual equipment, and field research supplies. 'Other' equipment available for students includes: skis, boats, bikes, binoculars, maple syrup supplies, and wilderness trip gear.

7. Clientele

Respondents were asked to estimate the number of visitors to their facility during calendar year 1990. Estimates range from 500 to just over 25,000. The facility that listed 500 indicated that its figure refers only to those visitors who came specifically for environmental education activities.

With respect to type of facility use, seven of the nine respondents reported that a large majority of their visitors 'participated in environmental education programs or used center services'. One center reported that the majority of its visitors 'used only the grounds, but not programming services'.

Residential centers were asked if they have to turn away prospective students or other visitors for any reason. Six of nine (66.7%) responded yes. Two centers said no (22.1%), and one did not respond. Reasons for turning away students include: Facilities filled to capacity, scheduling conflicts, visitors unable to afford fees, shortage of staff, and visitor groups did not meet the mission requirements of the center.

Types of visitors to these facilities varied among facilities. Five centers responded that the majority of their visitors were 'K-12 school groups'. One center listed 'post secondary groups' as their primary program participant; another listed 'other organized groups'. One center listed program participants evenly between 'K-12 groups', 'other organized groups' and 'general public'.

Like residential centers with environmental education as a primary mission, these facilities offer services to a wide variety of clientele. For both types of residential centers, community outreach classes and organized family groups form a small portion of their clientele. With respect to geographic representation of visitors, eight of the nine facilities responded that the majority of their visitors were state residents. One facility did not answer the question.

With respect to length of stay, the time periods range from a day to two months. The majority of stays appear to range between a day and one week. Estimated distance travelled by the majority of visitors to these facilities varies considerably. Three facilities responded that the majority of their visitors travel 10-50 miles; two facilities replied that the majority of visitors traveled 50-100 miles; and three facilities responded that a majority of their visitors traveled over 100 miles to participate in programs.

8. Effectiveness of Program & Instruction

Respondents were asked how they ensure their environmental education program matches the needs of the state's formal K-12, post-secondary, and adult education system. A majority of the facilities use 'informal peer consultation', 'staff review', and 'teacher evaluation' to ensure effectiveness of programs. One facility relies on 'formal curriculum development', two facilities use 'joint program development'.

All nine facilities monitor and evaluate program effectiveness through 'teacher evaluation', 'client feedback', and 'repeat visits'. Five centers use 'peer review' for program monitoring and evaluation.

C. Camps

1. Center Mission & Operations

Of 47 camps included in this survey discussion, twenty are religiously affiliated and twenty-seven are not. Camps as environmental education centers are very diverse. Some are associated with organizations such as the Y.M.C.A. and Girl

Scouts; others are church affiliated, still others are not associated with organizations and rely completely on clientele for operations and growth.

According to the seven educational goals listed by the 1990 Environmental Education Act, environmental education is a significant objective for 64 percent of the respondents. The percentage of facility time devoted to environmental education varies from 0 to 100 percent. With respect to educational emphasis, the overwhelming majority of respondents listed environmental-related topics. Forty-seven percent of the camps listed religious training as a topic as well. Social and recreational topics were also strong components for the camps.

2. *Operating Dates, Fees, & Physical Capacity*

Approximately half the camps surveyed indicated they were open during the three primary summer months (June, July, August). The remainder of the camps were open for longer periods of time ranging from a longer summer period to year round. Fee schedules varied considerably among camps. Cost ranges include:

per person/per day	$2.00 - $60.00
per person/per week	$70.00 - $270.00
per person/per month	$1550.00 (one response)

Of the 47 camp respondents 33 offer classrooms, 41 offer food service facilities, 40 offer indoor lodging, and 22 offer other sheltered areas. Ten camps responded that their facilities are completely handicapped accessible, eleven respondents said they were not, and eighteen camps responded that their facilities are partially accessible. Forty of the 47 camps offer overnight lodging for visitors.

3. *Type of Habitat & Equipment Offered*

Camps were asked to list the types of habitats available for learning. A majority responded that they have wetlands, forests, old field/meadows, and lakes/rivers/streams available for student use. With respect to equipment, a majority responded that they offer audio/visual equipment for users.

4. Clientele

Respondents' estimates for the number of people that visited each of their facilities range from 80 to 11,200 per camp during calendar year 1990. Thirty-two percent of the camps said that their visitors participated in environmental education programs or used center services; 26 percent of the camps responded that visitors used only grounds and not programing services.

Only about a third of the camps surveyed said they turned away prospective students or other visitors. Primary reasons for turning down visitors include lack of space and scheduling conflicts. Fewer camps indicated that they have turned away visitors than did residential centers or day-use centers.

Camps offer programs for all types of groups from pre K-12 and secondary students to organized family groups. Although most camp visitors are from Minnesota, for some facilities such as Mount Carmel Ministries located in western Minnesota, many visitors are from other states (40%). The distance visitors travel to camps varied across the spectrum from '0-10 miles' to 'greater than 100 miles' depending on the camp.

5. Effectiveness of Program & Instruction

A majority of camps ensure that state educational needs are met through staff review or self-examination and teacher evaluations. A majority of camps monitor and evaluate program effectiveness through client feedback, teacher evaluations, and repeat visits.

D. Other Residential Facilities

This section describes three residential centers that do not fit easily into other residential center categories such as facilities with EE as a primary mission, facilities with EE as a secondary mission, or camps. These facilities filled out inventories - inventory information for each is discussed below.

National Forest Lodge (Cook County) devotes 40% of time to environmental education programs with an emphasis on

environmental education, recreation, and social development subjects. National Forest Lodge is fully operational and open year round. The Lodge has an operating budget of $76,000; eighteen percent of this is devoted to environmental education. Lodge facilities includes food service, indoor lodging, camping, trails, and restrooms. Habitat types include wetland, forest, and lakes/rivers/streams. Of 140 visitors during 1990, all 'participated in environmental education programs or used center services'. The majority of these visitors were general public, were Minnesota residents, and traveled over 100 miles. Programs at the Lodge are monitored through client feedback, repeat visits, and peer review.

Foley Environmental Education Center (Crow Wing County) devotes 100% of time to environmental education activities (emphasis on environmental education and social development subjects). Foley is open in May and is fully operational; ten percent of the operating budget of $325,000 is devoted to environmental education. Fees are $80.00 per week; facilities include chapel and nature trails. Habitat types include wetlands, forest, old field/meadow, and lakes/rivers/streams. Four hundred people visited Foley during 1990 and 'participated in environmental education programs and used center services'. All visitors were K-12 school groups, were Minnesota residents, and traveled more than 100 miles. Programs are evaluated by teacher evaluation, client feedback, and repeat visits.

The Young Life Castaway Club (Ottertail County) devotes ten percent of time to environmental education, with an emphasis on environmental education and social development subjects. This center is open from May through December and is fully operational with plans for further development. Annual operating budget is $800,000 with none devoted to environmental education. Facilities include classrooms, food service, indoor lodging, bookstore, computer, amphitheater, and theater. Habitat types include wetland, forest, cropland/orchard, old field/meadow, landscaped areas, and lakes/rivers/streams. The center had 4,000 visitors during 1990; most of these were K-12 school groups, were Minnesota residents, and traveled greater than 100 miles. Programs are evaluated through client feedback.

V. Day Use Nature Centers

A. Center Mission and Operations.

The following discussion on day-use nature centers is based on responses from thirty-one facilities. All respondents said that environmental education is a significant objective of their facility based on the seven goals of the 1990 Minnesota Environmental Education Act. The percentage of time devoted to environmental education at these facilities ranges from 10 to 100 percent.

With respect to educational emphasis, the overwhelming majority of responses were activity types associated with environmental education (e.g., nature study, botany/ zoology, ecology, etc.). Recreational and social categories received strong response rates as well.

B. Operations, Fees, & Physical Capacity

Almost all day-use centers are open on a year round basis. Operating budgets range from minimal funding (e.g. volunteer time and in kind donations) to $700,000; staff time devoted to environmental education (including volunteer and paid time) ranges from .5 FTE's to 27 FTE's. Day-use center fees range from 'no charge' to several hundred dollars for equipment and building rentals. For students, the cost ranges from 50 cents per person to $3.50 per person. Twenty-nine of the thirty-one respondents offer classrooms for student use; ten offer food services facilities, and four offer indoor lodging.

C. Type of Habitat & Equipment Offered

Day-use centers were asked to list the types of habitats available for learning. A majority of respondents offer wetland, forest, prairies, cropland/orchard, old field/meadow, and lakes/rivers/streams for student use.

More day-use centers offer prairie-type habitats than do residential learning centers. The diversity of habitats offered by

day-use centers is high. A majority of day-use centers offer snowshoes, audio/visual equipment, and field research supplies.

D. Clientele

For the inventory questions on number of visitors, day-use centers responded with figures representing all visitors, not just those seeking an environmental education experience. During 1990 the number of visitors ranged from 125 to 125,000 depending on the type of facility.

Lowest Attendance (program participants only)

125 - Red Wing Environmental Learning Center (refers to the number of students participating on an annual basis).
560 - Crosby Farm Park Nature Center (environmental education visits only)
775 - Kettle River Environmental Education Center

Highest Attendance (Program participants and walk-in visitors)

50,000 - Dodge Nature Center (program participants only)
57,000 - Lowry Nature Center
60,000 - Wood Lake Nature Center
125,000 - Springbrook Nature Center

With respect to how visitors used the facilities, 71 percent of the respondents indicated that their visitors participated in environmental education programs and used center services. Only about 13 percent of the facilities indicated that visitors used only the grounds or only self-guided exhibits. These percentages are very similar to the responses of residential learning centers. People visiting these types of facilities are seeking a specific experience/program offered by the center.

71 percent of the respondents said they had to turn away prospective students or visitors. The most common reasons for turning away visitors include, 'not enough staff', 'not enough days to schedule all groups', and 'not enough space'.

Approximately 81 percent of the cliental served by day-use centers are students; almost all visitors to day-use centers are from Minnesota. More than ninety percent of the visitors travel no more than 50 miles to visit the facilities.

E. Effectiveness of Program & Instruction

A majority of day-use centers ensure that state educational needs are met through staff review or self-examination and teacher evaluations. A majority of respondents monitor and evaluate program effectiveness through teacher evaluations, client feedback, and repeat visits.

VI. Parks (state, regional, local)

Parks, whether state, regional, or local provide many opportunities for environmental education. The facility inventory was sent to the Minnesota State Parks as well as to metropolitan regional parks, and several national parks. The following discussion on parks is based on both inventory data and on follow-up with selected park providers.

MINNESOTA STATE PARKS

A. Mission and Operations

The Minnesota Department of Natural Resources' Division of Parks and Recreation operates 66 state parks that encompass 250,000 acres of land across the state. The mission of the Division of Parks and Recreation is to provide a state park system that perpetuates Minnesota's scenic beauty and its natural and cultural resources while being responsive to public needs and providing diverse recreation opportunities. There is a state park within 40 miles of every citizen of the state.

State law mandates the state park system to provide environmental education options for citizens. The Division of Parks and Recreation considers environmental education an important part of its work. State park facilities offer Direct Contact Public Programs (such as hikes, demonstrations, talks, shows and outreach efforts) and Non-personal interpretive

services (such as publications, signs, exhibits, and self guided interpretive trails).

The annual operating budget for the entire Parks and Recreation Division is $19.1 million. The portion of this operating budget that is devoted to environmental education is $ 1.3 million.

State park interpretive centers are open either year round or seasonally. The year round centers are open every day of the year. The seasonal centers, on average, are open from Memorial Day to Labor Day. Average costs for park interpretive centers are listed below. These cost figures do *not* reflect operating dollar needs.

a) Small interpretive center (avg. cost): $175,000

b) Medium interpretive center (avg. cost): $500,000

c) Large interpretive center (avg. cost): $1.5 million

State parks currently devote a total of 20 FTE's to interpretation. They have requested an additional $662,000 in interpretive and support positions.

State parks do not charge specific fees for environmental education and services. These costs are covered by the standard park fees:

$18.00: Annual vehicle permit
$12.00: Annual special vehicle permit (seniors, handicapped, second vehicle)
$4.00: Daily vehicle permits
$2.00: Daily group vehicle permits

Buses (including school groups) are charged the same rate as one vehicle.

61 of the 66 Minnesota State Parks offer camping. Types of campsites include drive-in, backpack, walk-in, group camp, horse camp, and canoe sites.

B. Site Type & Facility Quality

State parks offer a variety of habitats for visitors to use and experience. A majority of parks offer wetland, forest, lakes/rivers/streams and old field/meadow habitats. All habitat types listed in the survey are located in at least some of the state parks.

Some state parks also have equipment available for use by students. But unlike many residential and day-use education facilities, a majority of parks do not offer the types of equipment for learning listed in the inventory.

C. Clientele

During 1990, Minnesota state parks received an estimated 7.9 million visitors; over 850,000 of them were overnight guests. 590,000 visitors participated in direct contact interpretive programs; 232,000 visitors participated in programs by request. Eighty-two percent of state park visitors are day users. The remaining 18% stay an average of two days.

Approximately 20 percent of state park visitors were not Minnesota residents. Parks that receive out-of-state use are not only located near the border (Lake Bronson, Zippel Bay, Old Mill), but also include parks that are along popular or well-traveled routes (Interstate, Blue Mounds, Whitewater, Itasca, and the North Shore parks).

With respect to distance traveled, users of state parks traveled a variety of distances, the most common being 50 miles or under.

A majority of state parks at one time or another turned away perspective students or visitors for reasons including lack of interpretive staff to provide services, lack of facilities, facilities operating at full capacity, or facilities closed for certain days of the year.

D. Effectiveness of Program & Instruction

State parks offer interpretive curriculum to students and the general public, although a majority of presentations are given to the public.

A majority of state parks ensure that the state's educational needs are met through informal peer consultation and staff review or self-examination. A majority of state parks monitor and evaluate the effectiveness of their programs and instruction through client feedback, repeat visits, and peer review.

METROPOLITAN PARKS

The Metropolitan Council oversees regional park implementing agencies. Metropolitan area agencies responsible for park operations include Ramsey, Hennepin, Anoka, Washington, Carver, Scott, and Dakota counties, as well as, the cities of Bloomington, Minneapolis, and St. Paul. Baylor Regional Park in Young America, Minnesota is also within Metropolitan Council oversight. Although the Met Council considers environmental education to be an important and appropriate activity, actual environmental education programming is the responsibility of the regional parks.

The *Ramsey County park system* runs Tamarack Nature Center at Bald Eagle Lake Park. This center has two staff naturalists and offers naturalist-guided programming.

The *St. Paul park system* has set up a mobile home/trailer in Crosby Park to serve as an interpretive center. One part-time naturalist is employed. St. Paul is capitalizing on its interpretive center's urban location by developing outreach programs to the inner city community.

The *Anoka County park system* conducts environmental education activities from its interpretive facility at Bunker Hills park and is planning a day use center in the Rice Creek Chain of Lakes Regional Park. The county also works with 4-H and the area schools.

The *Minneapolis Park system* has limited environmental education efforts operated out of the Eloise Butler Wildflower Garden. This area is self-interpretive and offers occasional naturalist programs. The Minneapolis Parks system has recently hired a staff person for two

years to develop an urban environmental education program for the 44 recreation centers located throughout the city. In addition, the park system is working with the three environmental magnet schools in Minneapolis to utilize park resources for their environmental education curriculum.

Dakota County maintains a camp in Lebanon Hills Regional Park which receives extensive use from scout groups, churches, 4-H, and schools. Often these groups conduct their own environmental education programs in the camp. Dakota County does not conduct environmental education programs; the county has neither the staff nor the facilities at this point. Long range plans for Lebanon Hills Regional Park may include an interpretive facility. Dakota County is served to a small extent by Dodge Nature Center (a private, non-profit center serving mainly school groups) and Carpenter Nature Center (a private facility).

The *Hennepin Parks system* has three nature centers (Lowry Nature Center in Carver Park Reserve, Eastman Nature Center in Elm Creek Park Reserve, and Richardson Nature Center in Hyland-Bush-Anderson Lake Park Reserve), and four satellite program locations (Cleary Lake Regional Park, Coon Rapids Dam Regional Park, Baker Park Reserve, and French Regional Park). Environmental education in the park system is carried out through naturalist-led programs, special events, publications, and recreational activities. Hennepin Parks also coordinates with other agencies to offer educational workshops to the public. (e.g., a Wetlands Workshop offered with the Fish and Wildlife Service).

All three nature centers work extensively with area school systems to design and conduct programs according to the school's educational needs. These programs are geared for grades 1 through 6.

Hennepin Parks has an annual theme that directs environmental education in the park system. For example, 1990 was the "Year of the Woodlands"; therefore, the focus of Hennepin Park environmental education for 1990 was to raise public awareness of the importance of woodlands.

City and suburban park systems may have limited environmental education programs in place, either as a part of their parks and recreation programming or in the context of outreach programs to the school and the community.

For example, Eagan offers native prairie tours/hikes as part of Eagan's recreation programming. Eagan has an annual Arbor Day celebration, where residents learn about and participate in planting trees. The Eagan forester visits school classrooms to talk about urban forestry. The forester is also available to give residents advice about caring for trees on their property.

Other city-run parks include nature centers such as Westwood Hills in St. Louis Park, Wood Lake in Richfield, Staring Center in Eden Prairie, Springbrook in Fridley, Heritage in St. Cloud, and Hormel in Austin to name a few.

VII. Federal Government

A. U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service operates the new Minnesota Valley National Wildlife Refuge Interpretive Center in Bloomington, Minnesota. Environmental Education activities at the center include: Teacher workshops on how to use the refuge resource, providing equipment to groups using the refuge, and visiting schools throughout the year. The center also offers regularly scheduled and special interpretive programs.

The U.S. Fish and Wildlife Service also operates the following facilities or areas that contribute environmental education efforts: Tamarac National Wildlife Refuge, Rice Lake National Wildlife Refuge, Big Stone National Wildlife Refuge, Agassiz National Wildlife Refuge, Sherburne National Wildlife Refuge, and Detroit Lakes Wetland Management District.

B. Army Corps of Engineers

Although the Army Corps operates several recreation sites adjacent to dams, there are no interpretive centers located in the state. Camping and day use activities are available at Pokegema Recreation Area, Ronald Louis Cloutier Recreation Areas, Leech Lake Dam & Recreation Area, and the Terry R. Johnson Recreation Area.

Corps rangers receive annual interpretive training and offer environmental education efforts such as campground talks,

interpretive bulletin boards, "eco expos" (interpretive, participatory competition), and "junior ranger" programs. In the Mississippi headwaters area, one of the dams has an old lockhouse with donated archaeological displays from the area (e.g., arrowheads).

The Corps has an interest in using an existing historic building at Gull Lake (Brainerd) as an interpretive center, and needs assistance with this. The Corps would also like to develop an interpretive trail at this park.

C. U.S. Forest Service

The U.S. Forest Service manages two National Forests in Minnesota; the Chippewa National Forest and the Superior National Forest. The U.S. Forest Service encourages appreciation of the area's natural history and tries to increase awareness of conservation issues such as multiple use.

The U.S. Forest Service carries out environmental education through its Resort Naturalist Program, permit stations at Ranger District Offices, and in forest campgrounds.

The resort naturalist program provides a means for area resorts to carry out environmental education programs. The Forest Service recruits, trains, and matches seasonal naturalists with resorts. Resorts provide the naturalists with pay and/or room and board.

Environmental education efforts at permit stations consist of Boundary Water Canoe Area Wilderness (BWCAW) user education. Visitors are educated about appropriate visitor behavior in wilderness areas. Organized programs include movies, talks, tours, and canoe trips. Depending on availability of U.S. Forest Service staff, interpretive hikes take place at Forest Service campgrounds.

D. National Park Service

The National Park Service's environmental education efforts in Minnesota currently take place in three locations: Voyageurs National Park, Grand Portage National Monument, and Pipestone National Monument. Voyageurs National Park has three visitor

centers, one of which is open all year. Programs in the spring are directed toward school children and emphasize biodiversity. During summer, a variety of naturalist guided activities are offered, including historical interpretation of the area.

At Grand Portage National Monument, environmental education is incorporated into naturalist-led programs focusing on the history of the area (fur trading). Grand Portage also has a collection of educational films which are distributed to area schools.

VIII. Museums, Zoos, and Special Emphasis Facilities

A. Zoos

LARGE ZOOS

Mission & Operations

There are three large zoos in Minnesota: 1) The Minnesota Zoo in Apple Valley; 2) The Lake Superior Zoological Gardens in Duluth; and, 3) The Como Zoo in St. Paul. All three zoos consider environmental education a significant objective based on the seven goals in the 1990 Minnesota Environmental Education Act. St. Paul Como Zoo and Lake Superior Zoological Gardens do not employ paid environmental education staff.

The percentage of time devoted to environmental education for the three zoos varies from 15 to 60 percent. Educational emphasis for the three zoos centers on environmental education (including scientific education, ecology, botany/zoology, conservation resource management) and recreation.

Budgets, Fees & Staffing

All three zoos are open year round and all have plans for further development. St. Paul Como Zoo and Lake Superior Zoological Gardens seek expansion of environmental education programs once paid staff can be funded. This contrasts with the Minnesota Zoo which has eleven full-time staff, eight part-time staff, and more than 300 volunteers and interns working on environmental education. The Minnesota Zoo's annual budget is $11.7 million

(9.4% of which is devoted to environmental education) compared to the Como Zoo's annual budget of almost $900,000 (the amount of this devoted to environmental education was not specified). Lake Superior Zoological Gardens did not list a budget figure in the survey.

Costs for visiting zoos vary. The Como Zoo has no charge. Lake Superior Zoological Gardens charges overall admission rates. The Minnesota Zoo does not charge K-6 school groups but charges 7-12 graders $4.00. Teacher training costs $20.00 per workshop. The St. Paul Como Zoo and Lake Superior Zoological Gardens each have classrooms that hold about 40 people. Minnesota Zoo has a classroom that holds 20 but also has an indoor theater, a monorail train, and a bird amphitheater which can be used for teaching. All facilities are handicapped accessible.

Habitat, Equipment & Visitor Type

The Minnesota Zoo offers wetlands, forest, prairie, and lakes/rivers/streams habitats in addition to simulated habitats. Lake Superior Zoological Gardens has lake, river and stream habitat. For equipment, the Minnesota Zoo offers ski rentals, animal rides and animal interactions.

Both the Minnesota Zoo and the Como Zoo estimate that they have about one million visitors each annually. Lake Superior Zoological Gardens estimates about 130,000 visitors annually. About 90 percent of the people who participated in the Minnesota Zoo's environmental education programs are K-12 children. One percent are post-secondary groups and the remaining percentage are organized family groups, other organized groups, or community outreach classes. At Lake Superior Zoological Gardens 50% of people participating in environmental education programs are K-12 children, and 50% participate through community outreach classes.

Ninety-four percent of the Minnesota Zoo's visitors are Minnesota residents; the majority (70 percent) travel no further than 50 miles to visit the zoo. Eighty percent of Lake Superior Zoological Garden visitors are Minnesota residents; most visitors to this facility travel between 1-10 miles or more than 100 miles to visit this zoo. The Como Zoo has no figures on number of visitors.

The Minnesota Zoo indicated that severe shortages of classroom space and lack of residential facilities for outstate students limit the zoo in its ability to increase attendance at its environmental educational programs.

Program Review & Evaluation

The Minnesota Zoo uses formal curriculum review and accreditation as well as staff and teacher evaluations to ensure that their environmental education programs match the needs of the state's formal K-12, post-secondary, and adult education system.

Environmental topics that are frequently included in the Minnesota Zoo's curriculum include 'ecosystem concepts', 'human beings as part of the natural world', 'identification and evaluation of key issues and policies in environmental disputes' and 'demonstration of reducing, reusing, and recycling resource'. 'Appraising and giving examples of diversity in nature' is always included as a part of the Minnesota Zoo's curriculum.

Topics that are frequently included in Lake Superior Zoological Garden's curriculum include: 'explore basic ecosystem concepts', 'human beings as part of the natural world', 'define pollutants and describe effects', 'propose human social system', 'identify alternatives for dealing with environmental dilemmas' to name a few. Lake Superior Zoological Gardens always includes 'study habitat manipulation', and 'appraise and give examples of diversity in nature' in its environmental education curriculum.

Como Zoo frequently includes 'appraise and give examples of diversity in nature' and 'demonstration of reducing, reusing, and recycling resource' in its curriculum as provided by the Volunteer Docent Association.

SMALL ZOOS

In addition to the large zoos described above, Minnesota has other zoos. Some, located among major highways, are small facilities which may feature deer, bear, or other native animals. Others, such as Oxbow Park & Zollman Zoo operated by Olmsted County are larger and offer a variety of environmental education

programming. The Oxbow Park & Zollman Zoo, for example, consists of a park, nature center, and zoo which houses over 30 native Minnesota species.

Oxbow Park and Zollman Zoo is open on a year round basis and has a budget of almost $200,000 of which over 70 percent is devoted to environmental education. Environmental education is a significant objective of the facility given the seven goals outlined by the 1990 Environmental Education Act. The facility offers programs and services primarily to pre K-12 and K-12 school groups in addition to serving other community groups.

Oxbow Park & Zollman Zoo offer outdoor education, nature study, entertainment, ecology, and conservation/resource topics to name a few. The facility ensures that its program matches the needs of the state education system through informal peer consultation and review, staff review, and teacher evaluations. The effectiveness of programs and instruction are monitored and evaluated through pre-post student testing, teacher evaluations, client feedback, repeat visits, and peer review and monitoring.

Oxbow Park & Zollman Zoo is a good example of how environmental education centers can develop over time. The park was established in 1967, the Zoo in 1969, and the Nature center in 1981.

B. Museums

Background

Eleven museums responded to the inventory survey. Two of the museums said that environmental education was not a significant objective of their facility given the goals of the 1990 Minnesota Environmental Education Act, nor did they have a budget for environmental education. Accordingly, for the purposes of analysis the following nine facilities who either have an environmental education budget and/or consider environmental education a significant objective which responded to the survey were reviewed:

1) Gibbs Farm Museum operated by Ramsey County Historical Society;

2) Kelly Farm operated by the Minnesota Historical Society;

3) Forest History Center operated by the Minnesota Historical Society;

4) Science Museum of Minnesota operated by the Science Museum of Minnesota;

5) Vermillion Interpretive Center History Museum operated by the Ely-Winton Historical Society;

6) James Ford Bell Museum operated by the University of Minnesota;

7) Lyle's Logging Camp As It Was operated by the Cass Lake Civic & Commerce Association

8) Arrowhead Bluffs Museum operated by Les & John Behrens; and,

9) The Northwest Company Fur Post operated by the Minnesota Historical Society.

The size, curriculum, and focus among these museums vary greatly. Four of nine facilities which consider environmental education a significant objective asked that their responses be kept confidential. Accordingly, the following discussion, will only highlight major points about museums and their role in environmental education. Through much of the discussion, particular emphasis is placed on the Science Museum of Minnesota since its inventory responses are detailed.

Mission & Operations

Four museums responded that environmental education is not a significant objective of their facility given the goals of the 1990 Environmental Education Act. All, however, devoted time and effort to environmental education; between 10 and 100 percent of the time depending on the facility.

With respect to educational areas of emphasis, a majority of museums emphasize historical/cultural training. Several museums also offer a variety of environmental education topics.

Five of nine museums are fully operational with no plans for future development; the remaining four museums are fully operational and have plans for further development. Three museums are open year round, one is open for nine months, and five are open between three and six months.

Staffing, Budgets & Fees

Museum budgets range from under $20,000 to the $11.6 million budget of the Science Museum of Minnesota. Percentages of those budgets devoted to environmental education vary from 0 to 100 percent. Fees for museums vary from no cost to costs for group programs and traveling exhibits. The Science Museum of Minnesota's fees listed below are representative of the types of costs museums charge:

$3.00 - Student Field Trips
$6.00 - Adult Omni Theater & Exhibits
$3.00 - Child/Senior Exhibits only
$250.00 - Assemblies (Museum on the Move program)
$45.00 - All-Day Workshops
$25.00 - Half-Day Workshops

Museum classroom capacities vary as well. Some museums have no classrooms, other have rooms that can accommodate up to twenty visitors. The largest room for visitors is in the Science Museum of Minnesota which can seat over 670 people. Four of the museums responded that their facilities are handicapped accessible, five did not answer the question.

Habitat, Equipment & Visitor Data

Museums have habitats available for instruction. A majority of museums offer forest habitats, and half the museums offer cropland and lakes/rivers/streams habitats. The Science Museum of Minnesota listed all the habitat types because the museum's continuing education department offers classes outdoors in a wide variety of habitats. Kelly Farm also listed 'farm' as another type of habitat available for environmental education.

The most common types of equipment offered for use by students include laboratory equipment (2 of 9 museums) and audio/visual

equipment (3 of 9 museums). The Science Museum of Minnesota has computers available for student use.

Visitor use of museums varied from 2,260 people annually at the Arrowhead Bluffs Museum in Wabasha County to 774,901 at the Science Museum of Minnesota (931,071 including the museum's outreach program). Other visitor figures include:

Kelly Farm - 25,000
Gibbs Farm - 16,000
Forest History Center - 30,000
Vermillion Interpretive Center - 5,000

Five of the nine museums reported that visitors participated in environmental education programs and used center services. This compares with three museums reporting that visitors used only self-guided exhibits and one museum reporting that visitors used only the grounds. All types of visitors participated in the environmental education programs including pre K-12 groups, K-12 groups, post-secondary groups, and the general public.

Only the Science Museum of Minnesota reported that insufficient space has forced it to limit the size of classes and events. The Science Museum wants to increase the size of its exhibit halls to reduce crowding and the associated loss in quality of visitor experience.

A majority of visitors to museums are state residents although non-state residents, and non- U.S. citizens make up a substantial portion of Museum clients. The average length of stay is between one and two hours. One museum responded that its visitors stayed for three hours. The majority of visitors travel between 10 and 100 miles to the museums. A notable exception is Gibbs Farm in Ramsey County. Approximately 80 percent of its visitors are within 10 miles of the facility. (The Gibbs Farm facility is located 10 miles West of downtown St. Paul.)

Program Review & Evaluation

The museums offered a variety of responses as to how their environmental education program matches the needs of the state's formal K-12, post-secondary, and adult education system. Four of the 9 museums offered no response; four of 9 checked 'staff review', and 3 of 9 checked 'teacher evaluations'. The Science Museum of Minnesota appears to have the most means of ensuring state educational needs are met. This facility meets the state's educational needs through:

1) Advisory group review
2) Joint program development and implementation
3) Informal peer consultation and review
4) Staff review or self-examination
5) Teacher evaluation

Museums also monitor the effectiveness of programs and instruction. A majority of museums responded that program evaluation and monitoring occurs through client feedback and repeat visits. In addition, the Science Museum of Minnesota conducts scientific surveys of clients.

C. Other Specialty Facilities

There are other types of environmental education centers in Minnesota which provide services to students and the public but which do not easily fit into the category of residential centers, day-use centers, parks, zoos, or museums. The following discussion briefly describes the activities of several of these facilities, each of which offers environmental education services.

1. CLOQUET FORESTRY CENTER, UNIVERSITY OF MINNESOTA

Approximately 90 percent of this center's time and effort is devoted to environmental education. The center emphasizes a variety of environmental topics. The facility is fully operational with an annual budget of $250,000 (90% is spent on environmental education). The Center's classrooms hold up to 150 people and are handicapped accessible. The facility offers a wide variety of equipment and habitat types for students.

In 1990, the center had 4,843 visitors (97% state residents) most of whom used the environmental education programs and center services. The average length of stay is four hours Distances visitors must travel to the center vary widely. The center ensures that its programs meet the state's educational needs through formal curriculum review and accreditation, advisory group review, and staff review. The effectiveness of programs and instruction is monitored through pre-post student testing, teacher evaluations, client feedback and repeat visits.

2. THE RAPTOR CENTER AT THE UNIVERSITY OF MINNESOTA

Approximately 40 percent of the Raptor Center's time and effort is devoted to environmental education. The center emphasizes a variety of environmental topics. The center is fully operational with plans for further development. The facility is open year round. The center's budget is $934,000 of which 24 percent is devoted to environmental education. Fees for one hour staff programs are $135.00 and $50.00 for volunteer programs. The center's classrooms seat 100.

Approximately 7,500 people visited the Raptor Center in 1990, most were K-12 school groups. Approximately 95 percent of the visitors are state residents; the average length of stay is 1.5 hours. Program and instruction reviews are conducted through teacher evaluations, client feedback, and repeat visits.

3. MINELAND RECLAMATION DIVISION'S GROWTH/CHAMBER OFFICES AT CHISHOLM, MINNESOTA

Approximately 5 percent of this center's time is devoted to environmental education. Emphasis is on a variety of environmental education topics. The Center, which opened in April 1991, is fully operational and open for the entire year. The facility has a classroom which accommodates 60 visitors. Specialized scientific equipment is available for student use. Approximately 80 percent of the visitors to the facility are K-12 school groups from Minnesota. The average stay is for one hour.

The facility ensures that its programs match the state's needs through advisory group review, staff review, and teacher evaluations.

4. LAKE SUPERIOR CENTER

The Lake Superior Center first opened preview exhibits to the public in 1991. The Center anticipates strong interest in their programs and anticipates expansion for both its programs and facility. According to the seven goals listed in the 1990 Minnesota Environmental Education Act, environmental education is a significant goal of the facility (33 percent of the center's effort and time). Educational emphasis includes a variety of environmental topics as well as historical/cultural activities.

The Lake Superior Center is open on a year round basis and is partially operational with plans for further expansion. There are no fees for walk-in visitors; teacher workshop fees vary from $120.00 to $650.00. The Center also offers three hour ecology cruises on the L.L. Smith. Fees for this activity are $350.00 for school groups and $400 for charter groups. The Center's classrooms will accommodate 100 visitors; the L.L. Smith will accommodate up to 25 passengers.

The Lake Superior Center has laboratory equipment, outdoor clothes, audio/visual equipment, specialized scientific equipment, and field research supplies available for student use. Over a third of the Center's visitors are out-of-state residents and about 5 percent are non-U.S. citizens.

The Lake Superior Center ensures that its environmental education programs match the needs of the state through advisory group review, teacher evaluations, and accreditation by universities on a per program basis.

5. INTERNATIONAL WOLF CENTER - ELY MINNESOTA

The International Wolf Center devotes 100 percent of its time to environmental education. The Center emphasizes a variety of environmental topics and historical/cultural activities. The Center is open year round and is partially

operational with plans for further development. The International Wolf Center has plans for a new facility which would provide 2,000 square feet in classrooms and 9,600 feet in exhibit area.

The Center is located in forest habitat with lakes, rivers and streams. Audio/Visual equipment, specialized scientific equipment, and field research supplies are available for student use. The Center estimates that 40,000 people visited the facility in 1990 and that 120,000 people were involved in community and school outreach programs. Most of the Center's visitors use only self-guided exhibits. The majority of visitors are state residents, most of whom travel more than 100 miles to reach the center. Evaluations of the Center's programs take place through teacher evaluations and client feedback.

6. MOORHEAD STATE UNIVERSITY REGIONAL SCIENCE CENTER

Approximately 75 percent of this Center's time is devoted to environmental education. Educational emphasis includes a variety of environmental topics. The facility is fully operational with plans for further development and is open every month of the year. There is no charge for use of the Science Center's facilities.

The Center has handicapped accessible classrooms which accommodate up to 230 people. A wide variety of habitat and equipment types are available for student use. The Center has had to turn down school groups because of a lack of staff for instruction. (The Center can accommodate only one school group per day.) One half of the Center's visitors are from Minnesota, the other half are from North Dakota. 95 percent of the visitors travel 50 miles or less to the center. Instructional materials and program curriculum are monitored through teacher evaluations, and repeat visits.

7. LAKE ITASCA FORESTRY & BIOLOGICAL STATION AT ITASCA STATE PARK

Fifty percent of the station's time and effort is devoted to environmental education. Emphasis is placed on

environmental education, social activities, and historical cultural awareness. The center is open year round and is fully operational with plans for further development. About half the station's $375,000 budget is devoted to environmental education. Fees are $65.00 per person/per week. Those taking 3-5 credit courses pay University of Minnesota tuition fees. The Station offers a variety of habitats and equipment for student use.

During the 1990 calendar year, approximately 1,500 college and university students attended the station. Most of the visitors were resident students traveling more than 100 miles to reach the facility. Program monitoring takes place through formal curriculum review and accreditation, advisory group review, and teacher evaluation.

8. RED RIVER VALLEY NATURAL HISTORY AREA OPERATED BY THE UNIVERSITY OF MINNESOTA

Approximately 20 percent of the facility's time and effort is devoted to environmental education. Educational areas of emphasis include environmental topics as well as historical/cultural activities. The fully operational facility is open for 250 days a year but is usually only managed on a full-time basis from June to August. There are no fees charged for use of the area. The facility has a classroom which will accommodate 20 visitors.

Habitats available for visitors include wetlands, forest, prairies, and old fields or meadows. Snowshoes and field research supplies are also available to students. During 1990 approximately 700 people visited the facility, a majority of whom were a part of K-12 school groups. Over 90 percent of the visitors were state residents and most traveled ten miles or less. Program evaluation occurs through client feedback and repeat visits.

9. MINNESOTA LANDSCAPE ARBORETUM

The Minnesota Landscape Arboretum is a facility run by the University of Minnesota and located in Carver County. The arboretum devotes 50% of its program time to environmental

education and is open on a year round basis. A significant aspect of education at the arboretum includes horticulture/gardening (in addition to environmental educational topics). The arboretum has a variety of habitat sites and includes facilities such as a bookstore, restaurant, interpretive area, library, trails, and self-guided learning stations.

10. KAPLAN'S WOODS PARKWAY

Kaplan's Woods Parkway is located in the City of Owatonna and is operated by the city park system. This 225 acre area includes a former state park, 70 - 80 acres of donated land, and a 35 acre lake that had been a quarry. The city of Owatonna contracts with River Bend Nature Center to offer nature programming in the park. Kaplan Woods does not include a formal facility such as a nature center.

11. MISCELLANEOUS PROVIDERS THAT DO NOT OPERATE OUT OF A FACILITY OR ON A DEDICATED TRACT OF LAND

a) E.F. Waite Neighborhood House

The E.F. Waite Neighborhood House is a private, non-profit organization without a facility, that makes use of a variety of resources. Programs are developed with consumers' input and are implemented through existing consumer groups and staff from seven neighborhood centers. Outings are tailored to meet the needs and interests of each group. Programs are offered on a year round basis, with 75% of the budget being devoted to environmental education.

b) Central Minnesota Water Quality Project

The Central Minnesota Water Quality Project is a program which is not run out of a facility, but is delivered to clients in the form of conferences and meetings. It operates on a year round basis and devotes 100% of its time and budget to environmental education. The majority of users are organized groups other than families. Most programs are from 6 - 7 hours long

XI. Proposed Facilities & Projects

The following discussion briefly summarizes information about several environmental education centers or projects that are proposed or are in the developmental stages. The following facilities/projects either responded to the inventory questionnaire or provided supporting information about future development plans:

a) *Lawndale Environmental Foundation, Grant County;*

b) *Heron Lake Environmental Learning Center, Jackson County;*

c) *Kettle River Environmental Education Center, Sandstone;*

d) *Forest Resource Center, Lanesboro, Minnesota;*

e) *The Upper Mississippi River Refuge Learning Center;*

f) *Hartley Nature Center, Duluth;*

g) *Sand Prairie Wildlife Management Area, St. Cloud;*

h) *Joseph H. Wargo Nature Center, Anoka County;*

i) *Monticello Environmental Research Station, Wright County;*

j) *Elementary School Nature Areas in Southeastern Minnesota (Not a center per se, see narrative below.)*

k) *Prairie Woods Environmental Learning Center, Kandiyohi County;*

l) *Agassiz Environmental Learning Center, Fertile, Minnesota; and,*

m) *Prairie Wetland Learning Center, Otter Tail County.*

Many of the inventories and correspondence received from these proposed and newly operating environmental education facilities

include detailed position papers, goal statements, and descriptions of operations. Several respondents emphasize that their proposed facilities will fulfill a need to address educational needs surrounding prairies, wetlands, and agriculture. Several of these respondents propose to locate environmental education centers in the southwestern or central western part of Minnesota, where issues involving prairie and wetland management and agriculture practices are prevalent.

Not surprisingly, the quality of data for proposed facilities varies greatly since many of the responses are estimates for future programs. Many respondents were not able to answer, or gave estimates on questions about when they would be open during the year, number of FTE's devoted to environmental education, and annual operating budget. Similarly, most centers were unable to answer questions about fee schedules, or size and capacity of facilities. Most centers did not attempt to estimate what would be available to users at their centers.

Accordingly, only a short descriptive narrative for each facility follows.

A. Lawndale Environmental Foundation

This non-profit corporation operates in Grant County (West Central Minnesota). The Foundation's primary purpose is to supplement the efforts of the Lawndale Farm, which consists of 160 acres of privately owned restored native grasslands and marshlands. The privately owned farm has been conducting environmental education tours for several years.

The Lawndale Foundation plans to construction an Environmental Interpretive Center complete with auditorium, meeting rooms, library, overnight facilities, dining facilities, observation tower, and museum of natural history. The Foundation purpose is to provide a better understanding of the inter-relationship of all living and non-living things. To carry out its purpose, the Foundation would use tools such as restored prairie grasses, marshlands, numerous tree plantings, restored prairie potholes, agricultural land, and wildlife.

Lawndale Foundation believes that no environmental education facility currently exists for the prairie and farmland area of the

upper Midwest, and suggests that their proposed facility will help address this need.

B. Heron Lake Environmental Learning Center, Inc.

Heron Lake Environmental Learning Center, Inc. is a private, non-profit organization operating in Jackson County. The organization has not limited its scope to programs and displays at a single site, but has dealt with issues/projects relating to the entire Heron Lake watershed. Present projects include developing an environmental education guide for grades K through 12. The Heron Lake organization currently has several projects underway.

For example, Heron Lake Inc. is in the process of developing a 2,000 page Heron Lake Environmental Education Resource Guide which is intended to match up with the Department of Education's Model Learner Outcomes. Heron Lake Inc. is also in the process of identifying 150 to 200 natural locations for environmental awareness building and knowledge development sessions for students.

Heron Lake Inc.'s long term goals include developing a Midwest Research Center to showplace how agriculture and wildlife interests can be compatible. In fact the Nature Conservancy is expected to donate a 39 acre site in the Fall of 1991 to be used as a prairie park and headquarters site for the environmental learning center. These initiatives will include developing a corps of volunteers for environmental education efforts and developing relationships with higher education institutions.

Heron Lake Incorporated initiatives are directed toward: 1) Providing education and understanding of southwestern Minnesota's ecosystems; 2) Conducting education efforts on natural, on-site locations; 3) Preparing teachers to teach EE concepts; and, 4) To work closely with and create a supportive network with the community.

C. Kettle River Environmental Education Center, Sandstone Minnesota.

The Kettle River Environmental Education Center is a proposed residential environmental education facility to be operated jointly

with the Audubon Center of the North Woods. The facility would be owned by the City of Sandstone and run by a governing board appointed by the City Council. The Kettle River Facility would provide environmental education programming for grades K-12, and offer facilities for small conferences.

A feasibility study, masterplan, and architectural design have been completed for the residential facility. Land acquisition along with 7.5 miles of trails have been completed. Curriculum has been developed and schools have conducted field studies on the site for the last two years. Sandstone residents also regularly use the site. There are plans to join the trails with nearby city and state park trails.

The resources available for learning consist of cliff and marsh communities, a stream, waterfall, natural spring, and hardwood/conifer forest.

D. Forest Resource Center, Lanesboro, Minnesota

The Forest Resource Center is a private, nonprofit environmental education facility which is located on state forest land. The Forest Resource Center offers programs that demonstrate how to manage forestry resources for wise, multiple use. The principle audience has been private farmers and woodland owners, but a new facility is being added that will serve school children. Future plans for the Forest Resource Center include hiring full-time naturalists and building a dormitory effectively turning the center into a residential environmental learning center.

E. Upper Mississippi River Refuge Environmental Learning Center

The U.S. Fish & Wildlife Service is proposing to build an environmental education center in downtown Winona, Minnesota. The educational center would focus on the Upper Mississippi River National Wildlife and Fish Refuge. The center would include classrooms, labs, and interpretive displays as well as house USF&WS offices. The center would be used primarily to instruct teachers on how to provide environmental education to students. Outdoor education sites for students would be located at a refuge site near Trempealeau, Wisconsin.

The Legislative Commission on Minnesota Resources (LCMR) has provided $60,000 to fund a market analysis, conceptual design for the building, and conceptual planning for the interpretive displays. The LCMR has pledged an additional $600,000 to assist with building the facility contingent on the proposed center receiving $6 million in federal funding.

F. Hartley Nature Center, City of Duluth

Hartley Nature Center is currently an organization and has just begun fund-raising efforts to develop an ongoing, day-use, environmental education program aimed at grades K-12. This program would be housed out of a facility and would serve the Duluth school district (also possibly Superior, Wisconsin).

This organization envisions Hartley Nature Center working jointly with area residential and day-use education centers (Wolf Ridge Environmental Learning Center, Lake Superior Center), and the area school districts. The Hartley organization plans on taking a 'niche' approach to environmental education focusing on what each provider does best. For example, schools can teach daily conservation efforts such as recycling and home energy conservation (lessons that do not need tracts of natural land). Residential learning centers serve audiences from another part of the state who come to learn about different Minnesota biomes, and day-use centers serve a local clientele and focus on the local land.

The proposed Hartley Nature Center would serve between 50 - 100 students per day during the school year. The proposed $2.2 million dollar facility would include innovative ideas such as using aspects of the building as learning tools.

G. Sand Prairie Wildlife Management Area

Sand Prairie Wildlife Management Area is a planned state area which will provide environmental education, contingent upon funding. The area would not offer a facility or staff; but would have signed, self-guided interpretive trails and available printed information. A staffed wayside rest will be located nearby and

could provide information about the Wildlife Management Area. Materials could also be distributed to area schools.

700 acres of land near St. Cloud have been acquired for this project. Wetland and grassland restoration is planned for the area, which includes some prairie remnants. The community has assisted with donations. It is estimated that the project will be complete and operational by 1996.

H. Joseph H. Wargo Nature Center, Anoka County

Wargo Nature Center is currently in the early stages of planning. The center will be located in Lino Lakes, in the southeast part of Anoka County. The center will include large meeting areas; other facilities are yet unplanned.

Wargo Nature Center will be the first nature center in the Anoka Park District. One full-time naturalist will be employed, as well as part-time student workers and volunteers.

Resources at the site include wetlands, shoreland, and waterfall areas. The center will focus not only on these natural resources, but on cultural resources (e.g., Indian artifacts) that have been discovered in the area.

I. Monticello Environmental Research Station, Wright County

The Monticello Environmental Research Station is a facility that is in the process of being transferred from the Environmental Protection Agency to the University of Minnesota. Barring any complications, the tentative completion date of the transfer is January, 1992.

Under the EPA, the Monticello Station primarily served as a field research site. Facilities onsite include offices and a research laboratory. Current staff include five EPA positions, one University of Minnesota position (station manager), and two temporary staff.

In the past, Monticello had offered short courses on water pollution and wetland issues to high school groups. The

University has proposed to continue environmental education efforts at Monticello; these courses would be aimed at high school and college students. It is unknown whether facility expansion is planned; staff estimate that current facilities could accommodate a maximum class size of 5 - 10 people.

J. Elementary School Nature Areas, Southeastern Minnesota. Coordinated by Dr. Gary Deason, St. Olaf College.

This project seeks to establish nature areas for environmental education within walking distance of rural elementary schools. Consultants from St. Olaf and Carlton Colleges in Northfield will work with local elementary schools to determine optimal sites for conversion into environmental education nature areas.

The project proposers are seeking private and government grants. With this money, they will assist parents, students, and civic groups to maintain the nature areas and to help elementary teachers with curriculum development. Preliminary phases of the project have been given support from the Blandin Foundation. The project has also received strong local support.

K. Prairie Woods Environmental Learning Center, Kandiyohi County

Prairie Woods Environmental Learning Center is a proposed private, non-profit day-use facility that will be located in Kandiyohi County. Organizers are in the process of acquiring land for the facility site. The center will focus on prairie and agricultural issues. Learning center programs would emphasize four areas: farming, area biomes (prairies and woods), water resources and management, and the relationships between resources, land use, and community. The facility would be open all year.

L. Agassiz Environmental Learning Center, Fertile, Minnesota

The Agassiz Environmental Learning Center is a proposed residential facility. The facility will be located in Polk County and

will be owned and operated by the City of Fertile. The center plans to devote 100% of time to environmental education; programs will emphasize recreation and environmental education. Although the center is not yet operational, it has scheduled some group day-use tours off site with an interpreter. The planned facility will accommodate 150 participants initially. Habitats on site include forest, prairies, cropland, old field, lakes, rivers, and streams. Programs will be monitored using teacher evaluation and client feedback.

M. Prairie Wetland Learning Center, Otter Tail County

The Prairie Wetland Learning Center is a proposed day-use facility that will be located in Otter Tail County. Organizers anticipate that the facility will open in 1995. The facility will be owned and operated by the U.S. Fish and Wildlife Service. It is expected that 75% of the facility's time will be devoted to environmental education. Programs will emphasize recreation, environmental education, and conflict resolution of agriculture use vs. wetland preservation. This facility will be open all year and will offer a bookstore, computers, interpretive area, library, nature trails, and self guided learning stations. Habitats on the site include wetland, prairies, cropland, old field, and landscaped areas.

APPENDICES

ID # _____

CENSUS OF ENVIRONMENTAL EDUCATION CENTERS THROUGHOUT MINNESOTA

The Commissioner of the Department of Natural Resources, in cooperation with other affected agencies and residential and nonresidential environmental learning center directors has been directed to develop a long-range plan for the development and program coordination of environmental learning centers statewide. The plan must focus on identifying programming needs, geographic areas to locate facilities, and capital cost estimates for development and creation of a phased-in implementation strategy. The plan must be completed for presentation to the legislature by January 1, 1992.

In order to do this, we need your help. Please complete the attached Environmental Education Facility Census form to the best of your ability and return it in the pre-paid mailer. All information collected will be kept confidential, and no individual respondents will be identified. Survey results will be used only in conjunction with the study and presented as aggregate statistics.

Questions? Call Toll Free 1-800-652-9747 or (612) 297-3357 in the Metro Area.

Facility Name: _____

Location of primary facility:

County (or Counties) _____ Year Built / Opened _____

Distance and Direction from Nearest City or Town _____

Section(s) _____ Township(s) _____ Range(s) _____ Total Acreage _____

Urban ___ Suburban ___ or Rural ___ (check one)

Do you know which Education Cooperative Service Unit your facility is located in?
ECSU # _____ Don't Know _____

Owned by: _____

Operated by: _____

Status: (please circle one) private / public / private non-profit / other (explain)_____

Completed by: Name _____ Title _____

Address _____

City _____

State _____ Zip _____ Telephone (____) ____-_____

Last year, the Minnesota Legislature called for the development of a comprehensive statewide plan and strategy for life-long environmental learning. Recognizing the important need for all Minnesotans to be knowledgeable about the environment in which they live, state lawmakers set forth seven environmental education goals for Minnesotans. The goals are listed below. Please keep them in mind as you complete the survey. Thank you for your assistance.

All Minnesotans should be able to:

1. Understand ecological systems;
2. Understand the cause and effect relationship between human attitudes, human behavior and the environment;
3. Analyze, develop and use problem-solving skills to understand the environmental decision making process used by individuals, institutions and nations of the world;
4. Evaluate alternative responses to environmental issues before deciding on alternative courses of action;
5. Understand the complementary nature of multiple uses of the environment;
6. Exhibit sensitivity and stewardship towards the environment; and
7. Make informed decisions about actions to take on environmental issues.

I. CENTER MISSION AND OPERATION

1. **According to the 7 goals listed above, is environmental education a significant objective of your facility?**

   ____ Yes ____ No

2. **What percentage of the center's time and effort are devoted to environmental education?**

   _____%

3. **Which areas of education does your center emphasize? (check all that apply)**

____ outdoor education	____ ecology	____ conservation/resource management
____ nature study	____ botany / zoology	____ historical / cultural
____ special education	____ religious training	____ production / manufacture
____ scientific education	____ family development	____ youth development
____ entertainment	____ recreation	____ adventure education

____ other _____ _____

4. **Approximately how many days during 1990 was your center open and available to provide environmental instruction (365 days = 1 year)**

_____ (days)

5. **During which months of the year is the center in operation?** (circle all that apply)

J F M A M J J A S O N D

6. **Is your facility (check one)**

____ no longer in operation
____ fully operational
____ fully operational with plans for further development
____ partially operational with plans for further development
____ partially operational with no plans for development
____ not yet operational

7. **How many Full Time Equivalents (FTE's) of effort were specifically devoted to environmental education during calendar year 1990? (1 FTE = 52 weeks X 40 hr/wk = 2080 hours)**

	Teaching*		Curriculum Development		Administration		Support Staff**		Total FTE's
Full-Time	_____	+	_____	+	_____	+	_____	=	_____
Part-Time or Seasonal	_____	+	_____	+	_____	+	_____	=	_____
Volunteers or Interns	_____	+	_____	+	_____	+	_____	=	_____

* (Teaching = contact time + preparation time)
** (Support Staff = clerical + maintenance)

8. **What is your total annual operating budget?** $_____

9. **What percentage of this amount would you estimate is devoted to environmental education?**

_____%

10. **Please itemize historic expenditures for each of the Center's primary education-related facilities below.**

Facility	Year Built or Acquired	Capital Cost	Estimated Replacement Cost
_____	_____	$_____	$_____
_____	_____	$_____	$_____
_____	_____	$_____	$_____
_____	_____	$_____	$_____
_____	_____	$_____	$_____
_____	_____	$_____	$_____

11. **Briefly describe your fee schedule on a per person daily or weekly basis for environmental education programs and services. Include food, lodging and miscellaneous expenses if applicable.**

_____

_____

_____

_____

_____

12. **What is the center's total physical capacity for each of the following types of facilities. For each facility type, state both the designed capacity and the largest single group size the facility can accommodate. Please include combined totals for all facilities of each type.**

[note: Designed Capacity = number of people that facility was **designed** to serve.
Largest Group Size = the largest group of people the facility can accommodate in one, contiguous area; i.e, by employing temporary eating or standing areas.

Facility Type	Designed Capacity Total	Largest Group Size	Total Square Feet	Handicapped Accessible?
Classrooms/ indoor teaching areas	_____	_____	_____	Y / N
Food service facilities	_____	_____	_____	Y / N
Indoor lodging	_____	_____	_____	Y / N
Other sheltered teaching areas (include unheated and outdoor facilities)	_____	_____	_____	Y / N

13. **What else is available to users at your center?** (check all that apply)

____ bookstore
____ camping
____ canteen
____ chapel
____ computer
____ laboratory
____ amphitheater
____ other _____

____ craft center
____ interpretive exhibit area
____ library
____ museum
____ nature trails (total miles _____?)
____ theater
____ self-guided learning stations
____ rest rooms

14. **Please circle those facilities listed in question #13 that are accessible to persons with physical disabilities.**

II. SITE / FACILITY QUALITY

1. **Check each of the habitat types listed below that are available for environmental instruction.**

Habitat Type	Check Below
wetland	_____
forest	_____
prairies	_____
cropland or orchard	_____
old field / meadow	_____
landscaped	_____
lakes, rivers & streams	_____
other: _____	_____

2. **Which of the following types of equipment are available for use by students at your center?**

Type	Check Below
Laboratory Equipment	_____
Outdoor Clothes / Boots	_____
Audio / Visual Equipment	_____
Snowshoes	_____
Specialized Scientific Equipment	_____
Computers	_____
Field Research Supplies	_____
other: _____	_____
_____	

III. CURRICULUM AND CLIENTELE

1. **During the 1990 calendar year, what is the total estimated number of people that visited your facility?**

   _____

2. **Does your center keep formal written records regarding center use and visitation?**

   Yes or No (circle one)

   If you answered no, please skip to question #9.

3. **What percentage of these visitors**

   A. used only the grounds, but not programming services? _____%

   B. used only self-guided exhibits and services? _____%

   C. participated in environmental education programs or used center services? _____%

   D. other? _____%

   Total (A+B+C+D) = **100%**

4. **During this same period, did you have to turn away prospective students or other visitors for any reason?**

   Yes or No

   If yes, why? _____

   _____

   _____

   _____

   _____

5. **What percentage of those who actually participated in center programs or services (question 3c) were from:**

   pre K-12 school groups _____%
   K-12 school groups _____%
   post secondary groups _____%
   organized family groups _____%
   other organized groups _____%
   general public (walk-in basis) _____%
   community outreach classes _____%

   Is this response based on actual records or is it an estimate? _____ **Actual** _____ **Estimate**

6. **Estimate the percentage of your visitors who are:**

state residents _____%
out-of-state residents _____%
Non- U.S. citizens _____%

Is this response based on actual records or is it an estimate? _____ **Actual** _____ **Estimate**

7. **What is the estimated average length of stay:** _____ **(hours/visit)**

Is this response based on actual records or is it an estimate? _____ **Actual** _____ **Estimate**

8. **Estimated distance travelled by the majority of visitors:**

0 - 10 miles _____%
10 - 50 miles _____%
50 - 100 miles _____%
> 100 miles _____%

Total = 100%

Is this response based on actual records or is it an estimate? _____ **Actual** _____ **Estimate**

9. **How do you ensure that your environmental education program matches the needs of the state's formal K-12, Post-Secondary and Adult education system? (Check all that apply)**

____ Formal curriculum review and accreditation
____ Advisory group review
____ Joint program development and implementation
____ Informal peer consultation and review
____ Staff review or self-examination
____ Teacher evaluation
____ Other (describe) _____

10. **How do you monitor and evaluate the effectiveness of your programs and instruction? (Check all that apply)**

____ Pre - post student testing
____ Teacher evaluation (as part of in-school evaluation)
____ Client feedback
____ Repeat visits
____ Peer review and monitoring
____ No monitoring system in place
____ Other (describe) _____

11. **How often are each of the following environmental topics addressed by one or more of the Center's curriculum offerings?** (please circle)	never	infrequently	sometimes	frequently	always
Explore basic ecosystem concepts, including physical and biological components of natural systems.	1	2	3	4	5
Trace energy flow through an ecosystem and discuss the roles of producers, consumers and decomposers.	1	2	3	4	5
Discuss physical and biological cycles in earth's biosphere.	1	2	3	4	5
Discuss human beings as an integral part of the natural world, including ways we influence and are influenced by natural processes.	1	2	3	4	5
Explore human population growth and future implications.	1	2	3	4	5
Explore modern agricultural technologies and how they impact land and water quality.	1	2	3	4	5
Study habitat manipulations and their effects on animal and plant populations.	1	2	3	4	5
Define pollutants and describe the effects of various levels of pollutants on the environment.	1	2	3	4	5
Understand the concept of imported/exported pollution.	1	2	3	4	5
Propose a human social system in harmony with the environment.	1	2	3	4	5
Describe the roles of citizens in forming public policy.	1	2	3	4	5
Identify and evaluate key issues and policies in an environmental dispute.	1	2	3	4	5
Describe how decisions made at the local level can affect communities nationally and internationally.	1	2	3	4	5
Identify alternatives for dealing with environmental dilemmas. Evaluate the consequences of each alternative and select and defend a position.	1	2	3	4	5
Appraise and give examples of diversity in nature.	1	2	3	4	5
Differentiate between waste and recoverable resources.	1	2	3	4	5
Differentiate between appetite (I Like), knowledge (I Know), Ethics (I Judge), morals (I Act), desire (I Want), and necessity (I Need) relative to environmental values.	1	2	3	4	5
Demonstrate an understanding of reducing, re-using and recycling of resources, and rejecting materials that are environmentally unsound.	1	2	3	4	5

Would you like the information that you supplied kept confidential or provided upon request to groups requesting data summaries?

- ❑ **Please keep information confidential.**
- ❑ **Please make information available upon request.**

_____

Signature / Date

(please attach additional sheets if necessary)

When completed, please return to:

Brian McCann
DNR, Office of Planning
500 Lafayette Rd
St. Paul, MN 55155-4010

THANK YOU FOR YOUR ASSISTANCE!

ENVIRONMENTAL LEARNING CENTER SURVEY RESPONDENTS

Residential Facilities

Primary Mission

Long Lake Conservation Center

Wolf Ridge Environmental Learning Center

Mounds View North Environmental Learning Center

Audubon Center of the North Woods - (aka - North Woods Audubon)

Deep Portage Conservation Reserve

Centers Which Emphasize Environmental Education in Addition to Other Activities

Vinland Nature Center

Camp Ojiketa and Camp Cheewin

Camp Courage

Green Lake Bible Camp

Lake Carlos Environmental Center at Luther Crest

Wilder Forest

Confidence Learning Center

Wilderness Canoe Base

North Woods Resource Center

Camps

YMCA Camp Ihduhapi

Mount Olivet Retreat Center

Camp Kingswood

Camp Arrowhead

Camp Shamineau

Camp Winnebago

Mount Carmel Ministries

Circle R Ranch

Camp Thunderbird

Little Elk Youth Ranch

Camp Ruby Lake, Greater Mpls. Girl Scout Council

Camp Kamaji

MN Elks Youth Camp

Camp Chippewa for Boys, Inc.

Camp Kooch-i-ching

Camp Katherine Parsons

Camp Kici Yapi

Gunflint Wilderness Camp

Camp Birchwood

Eden Valley T.T.T. Summer Camp

YMCA Camp Widjiwagan

Camp Du Nord/Northland YMCA

Many Point Scout Camp

Sherburne Co. 4-H Camp

YMCA Camp Menogyn

Camp Greenwood - Greater Mpls. Girl Scout Council

Camp Manitou/Northwest YMCA

Camp Lincoln/Camp Lake Hubert

Northeast YMCA Day Camp

Camp Hiawatha - Voyageurs Lutheran Ministry

Lake Beauty Bible Camp

Camp Mishawaka

Cass Lake Episcopal Camp

Carnon River Scout Reservation

Kiwanis Scout Reservation

Camp Trowbridge

Singing Hills Girl Scout Camp

Camp Vermillion - Voyageurs Lutheran Ministry

Northern Pines United Methodist Assembly Grounds

Decision Hills United Methodist Camp

Camp Omega

Camp Onomia

Camp Ajawah

Covenant Pines Bible Camp Inc.

Timber Bay Camp

Chi Rho Camp & Retreat Center

Lake Shetek Environmental Center

Temple Israel's Camp Teko

Other Residential Facilities

Foley Environmental Education Center

National Forest Lodge

Young Life Castaway Club

Day Use (e.g. Nature Centers)

Staring Lake Outdoor Center

Harriet Alexander Nature Center

Wetlands, Pines and Prairie Audubon Sanctuary

Morris Wetlands Management District

Quarry Hill Nature Center

Redwing ELC

Crosby Farm Park Nature Center

Kettle River EE Center

Lowry Nature Center

Wood Lake Nature Center

Springbrook Nature Center

Mpls. Chapter Izaak Walton League

Lake Washington Nature Center

Belwin Outdoor Education Laboratory

Carpenter St. Croix Valley Nature Center

Tamarack Nature Center

Heritage Nature Center

Hawk Ridge Nature Reserve

J.C. Hormel Nature Center

Westwood Hills EE Center

Richardson Nature Center/Hyland Lake Park Reserve

University of MN-Duluth Outdoor Program

University of MN-Duluth - Kayak & Canoe Institute

K. Ordway Natural History Study Area

Eastman Nature Center

The Farm by the Lake

Maplewood Nature Center

River Bend Nature Center

Lee and Rose Warner Nature Center

MN Agricultural Interpretive Center - (aka - FarmAmerica)

Dodge Nature Center

Parks (state, regional, local)

State Parks

Minnesota State Parks

Regional/Local Parks

Baker Park Reserve

Coon Rapids Dam Regional Park Visitor Center

French Regional Park

Note: It is understood that there are many other regional and local parks. For example, the focus group narrative discusses Minneapolis City Parks, and some of the Hennepin Park operations.

Federal Government

Wildlife Refuges

Agassiz National Wildlife Refuge

Sherburne National Wildlife Refuge

Detroit Lakes Wetland Management District

Rice Lake National Wildlife Refuge

Tamarac National Wildlife Refuge

MN Valley National Wildlife Refuge

U.S. Corps of Engineers

U.S. Army Corps of Engineers, Pokegama Rec Area

Ronald Louis Cloutier Recreation Area

Leech Lake Dam & Recreation Area

Terry R. Johnson Recreation Area (Gull Lake Dam)

Sandy Lake Recreation Area

National Parks

Voyageurs National Park

Grand Portage National Monument

Pipestone National Monument

Zoos, Museums & Special Emphasis

Zoos

St. Paul's Como Zoo

Como Zoo Docent Association

Minnesota Zoo

Lake Superior Zoological Gardens

Oxbow Park/Zollman Zoo

Museums

Science Museum of Minnesota

Gibbs Farm Museum

Vermillion Interpretive Center

Kelley Farm

Forest History Center - MN Historical Society

James Ford Bell Museum of Natural History

MN Historical Society's North West Co. Fur Post

Arrowhead Bluffs Museum

Lyle's Logging Camp As It Was

Other Specialty Facilities

Minnesota Landscape Arboretum

The Raptor Center, U of M

Cloquet Forestry Center, U of M

Mineland Reclamation Division's Growth Chamber /Offices

Lake Superior Center

International Wolf Center

Moorhead State University Regional Science Center

Lake Itasca Forestry & Biological Station

Red River Valley Natural History Area

New/Proposed Facilities

Forest Resource Center

Upper Mississippi River WFR

Heron Lake Area ELC

Lawndale Environmental Foundation

Prairie Woods Environmental Learning Center

Sand Prairie WMA

Monticello Environmental Research Station

Joseph H. Wargo Nature Center

Prairie Wetland Learning Center

Agassiz ELC

Hartley Nature Center

Kettle River Environmental Education Center

Non-Facility/Existing & Proposed

Central MN Water Quality Project

E.F. Waite Neighborhood House

Kaplan's Woods Parkway

Rural School-Side Nature Area

Inventories Not Compiled

The following inventories were not compiled for one of the following reasons: 1) The survey response indicated that the facility devoted no time to environmental education efforts; 2) The respondent indicated that the facility is not devoted to environmental education; 3) The facility is not located in Minnesota; or, 4) The survey response was received after the compilation of data (e.g., several inventories were received in October and November 1991).

Museum of Natural History, Southwest State University

Cuyuna Range Historical Museum

YMCA Camp St. Croix Environmental Center

Concordia College - Moorhead

Environmental Conservation Library

Marshland District Visitor Information Center, National Park Service

Heritage Hjemkomst Interpretive Center

Voyageurs National Park Boat Tours

U.S. Fish & Wildlife Service, Litchfield Wetland Mgmt. District

Walker Wildlife & Indian Artifacts Museum

Camp Courage North

First Settlers Museum

Hull-Rust-Mahoning Mineview Site

Fairibault Regional Center

Mississippi Headwaters AYH Hostel at Itasca State Park

Hinckley Fire Museum

Stillwater Visitors Center

Pine Grove Park & Zoo

Good Earth Village Bible Camp

YMCA Camp Miller

Cedar Creek Natural History Area

Camp New Hope

Camp Voyageur

Camp Greenwood

ELC1 August, 1991

LIST: ELC1 **NAME: Environmental Education Center Study Technical Advisory Committee & State Agency Participants**

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Section E

Private Foundation Funding

PRIVATE FOUNDATION FUNDING

I. Background

Environmental education centers receive support for capital development and improvements through a variety of means including local communities, government, private and non-profit foundations as well as from individuals. Environmental education centers fund their programs also through tuition fees, memberships, merchandise sales, and grants. As part of the environmental education center study, an overview of private foundation funding sources for capital improvements and programing needs was conducted. The purpose of the overview is to give the reader an understanding of the role foundations play in supporting environmental education efforts, and to depict how foundations may play a future role with respect to environmental education centers.

The information presented in this section is based on informal discussions with personnel of the Minnesota Council on Foundations in Minneapolis, environmental education providers, and private foundations that contributed to the development in the mid-1980s of several environmental learning centers.

The discussion that follows is not meant to be inclusive of all foundation sources. In fact, hundreds of small foundations and non-profit organizations which are not mentioned below contribute to environmental education efforts -- while the scope of the study is too small to acknowledge the effort and support of each, environmental education providers involved in this study emphasize that the support of every organization is important and appreciated.

II. Historical Support

During the last twenty years the philanthropic community, through its financial support and land bequests, has been a contributing factor in the development and growth of environmental education facilities. Foundations which gave more than $50,000 for capital developments at Wolf Ridge include: Bush, Mardag, and Blandin. These three foundations along with the Nash foundation also funded the capital development of Long Lake Conservation Center and Deep Portage Conservation Reserve. Together their combined grants from 1985 to 1987 assisted the construction and completion of the physical facilities and necessary infrastructure at the three residential environmental learning centers listed above.

Other private firms support environmental education efforts as well. The Red Wing Shoe Company has been a primary supporter of the Red Wing Environmental Learning Center; the Hormel Company in Austin, Minnesota, has funded the J. C. Hormel Nature Center. A private non-profit foundation, Metro Nature Center Inc. (now disbanded), was established to fund the development of Eastman and Lowry Nature Centers. Private sources have funded environmental education facilities as well (e.g., The Dodge Nature Center by the Thomas Irving Dodge Foundation).

Besides supporting capital development of environmental education facilities, these foundations and other philanthropic organizations have periodically funded environmental programs offered by private social service agencies or groups. On the whole, private foundations continue to support programs which address environmental issues. Foundations, however, generally are not currently funding development of new centers (e.g., capital costs for buildings and facilities). The four foundations which assisted in the development of Long Lake, Wolf Ridge and Deep Portage in the mid-1980s view that support as a one-time commitment, and currently have no plans to make grants for the development of additional residential environmental education centers. At the same time, these foundations generally are not interested in supporting improvement of existing facilities because, in their view, many environmental education centers are still new, some being only five to six years old. Relatively few foundations support programs which address environmental issues.

III. Program Support

At present, many large foundations in Minnesota including Bush, St. Paul, Mardag, McKnight in Minneapolis, and Blandin in Grand Rapids, have received requests for financial support of programs addressing environmental issues. Many of these requests are for environmental education, specifically in the area of curriculum development.

Foundations entertain other types of requests as well. For example, the Blandin Foundation recently approved a request from Wolf Ridge for developing and launching a membership and marketing campaign. This is the first program support request granted to Wolf Ridge. McKnight also recently hired a staff member assigned to a new environmental program focussing on the Mississippi River with the goal of river conservation and pollution prevention. *Other than the two specific efforts from Blandin and McKnight, most foundations appear not to consider support of environmental education as a priority,*

although foundations have funded environmental education programs in the past, and apparently will continue to accept and consider requests for environmental related program funding in the future.

According to some foundations, there is still interest within the philanthropic community, and in particular among wealthy private individuals, for supporting the development of residential environmental education facilities. The recent development of the Forest Resource Center in Lanesboro in the southern part of Minnesota is evidence of that interest. The physical facilities (i.e., the brick and mortar components) at the Forest Resource Center were entirely built with private money.

IV. Future of Foundation Support

Based on discussions with foundations, it appears that some foundations have an on-going interest in supporting environmental education activities. Foundations' interest in supporting facility development, however, appears to have sharply decreased.

The decreased support in part may be attributed to recent trends of government shifting public programs to the private sector. These trends have caused a concomitant increase in the number of parties seeking funds from private and non-profit foundations. While many foundations view environmental education initiatives as being important, environmental-related proposals must compete with a growing number of other worthy projects for limited dollars. In addition, the earnings of many foundations have decreased along with the slowdown in the nation's economic activity. The result of both of these trends is fewer dollars for environmental education.

Those proposing to build new environmental education facilities, or upgrade existing centers will have to either convince foundations of the need for additional/upgraded facilities to address unmet demand, or seek other funding sources for capital development, and request that foundations support environmental education programming only. With respect to any environmental education funding proposal, the competition for limited foundation dollars with other causes will be intense.